XR-500/502

SERVICE MANUAL

AEP Model
E Model
PANAMA Model
XR-500
Germany Model
XR-502

Photo: XR-500

Tape Transport Mechanism Type	MG-36SV-32

SPECIFICATIONS

Power amplifier section (XR-500)

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	3.2 – 8 ohms
Maximum power outputs	25 W × 2 (at 4 ohms) 22 W × 2 (at 4 ohms) (XR-502) 6 W × 4 (at 4 ohms)

Cassette player section

Tape track	4-track 2-channel stereo
Frequency response	30 – 16,000 Hz
Signal-to-noise ratio	55 dB
Wow and flutter	0.15 % (WRMS)

Tuner section

FM

Tuning range	87.5 – 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	12.5 dBf (75 ohms)
Selectivity	70 dB at 400 kHz
Signal-to-noise ratio	62 dB (stereo), 65 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	30 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	3 dB

AM

Tuning range	531 – 1,602 kHz
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	35 μV

General

Output lead	Power antenna relay control lead
Tone controls	Bass +8 dB at 100 Hz Treble ± 8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions (without bracket)	Approx. 178 × 50 × 167 mm (w/h/d) not incl. projecting parts and controls
Mounting dimensions	Approx. 182 × 53 × 145 mm (w/h/d) not incl. projecting parts and controls
Weight	Approx 1.9 kg
Accessories supplied	Mounting hardware (1 set)

Design and specifications subject to change without notice.

FM/AM CASSETTE CAR STEREO

SONY®

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Note for Lithium Battery

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions

ADVARSEL !

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Lever det brugte batteri tilbage til leverandøren.

ADVARSEL

Lithiumbatteri-Eksplosjonsfare.
Ved utskifting benyttes kun batteri som
anbefalt av apparatfabrikanten.
Brukt batteri returneres apparatleverandøren.

VARNING

Explosionsfara vid felaktigt batteribyte. Använd samma batterityp eller en likvärdig typ som rekommenderas av apparattillverkaren. Kassera använt batteri enligt gällande föreskrifter.

VAROITUS

Paristo voi räjätää, jos se on virheellisesti asennettu Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

This section is extracted from XR-500 instruction manual.

SECTION 1
GENERAL

Installation/Connections

Installation — Installation — Instalación — Montage

Precautions

- Choose the mounting location carefully so that the unit will not interfere with the normal driving functions of the driver.
- Avoid installing the unit where it should be subject to high temperatures, such as from direct sunlight or hot air from the heater, or where it would be subject to dust, dirt or excessive vibration.
- Use only the supplied mounting hardware for a safe and secure installation.

Précautions

- Choisir soigneusement l'emplacement du montage pour que l'appareil ne gêne pas les fonctions normales de conduite du véhicule.
- Eviter d'installer l'appareil dans un endroit où il pourrait être exposé à une haute température, telle que celle de la lumière directe du soleil, ou provenant d'un appareil de chauffage, ou dans un lieu exposé à la poussière, à la saleté ou à une vibration excessive.
- Utiliser uniquement le matériel de montage fourni pour réaliser une installation sûre.

Precauciones

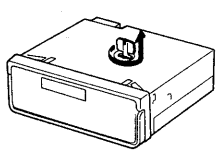
- Elija cuidadosamente el lugar de montaje de forma que la unidad no interfiera las funciones normales de conducción.
- Evite instalar la unidad donde pueda quedar sometida a altas temperaturas, como a la luz solar directa o al aire caliente de calefacción, o polvo, suciedad, o vibraciones excesivas.
- Para realizar una instalación segura y firme, emplee solamente la ferretería de montaje suministrada.

Opgelet

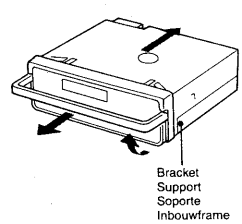
- Installeer het apparaat niet op een plaats waar het u bij besturing van de auto zou kunnen hinderen.
- Installeer het apparaat niet op plaatsen waar het blootgesteld wordt aan hoge temperaturen zoals van direkt zonlicht of de warme luchtstroom van de autoverwarming, aan sterke trillingen, of waar het in kontakt komt met veel stof of vuil.
- Gebruik voor het veilig en stevig monteren van het apparaat uitsluitend de bijgeleverde montage-onderdelen.

To Install the Unit in the Dashboard
Installation de l'appareil dans le tableau de bord
Para instalar la unidad en el salpicadero
Monteren van het apparaat in het dashboard

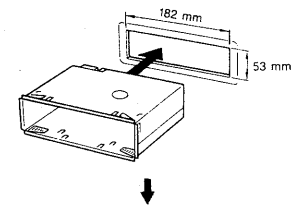
1 Remove the transit lock by turning it 90°.
Retirer la clé de transport en la tournant à 90°.
Quite el seguro de transporte girándolo 90°.
Verwijder de transportvergrendeling door deze 90 graden te verdraaien.



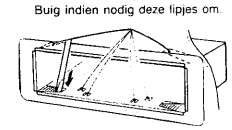
2 Remove the bracket.
Retirer le support.
Quite el soporte.
Verwijder het inbouwframe.



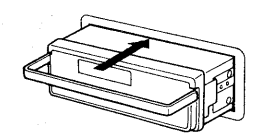
3 Install the bracket in the dashboard.
Installer le support dans le tableau de bord.
Instale el soporte en el salpicadero.
Monteer het inbouwframe in het dashboard.



Bend these claws, if necessary.
Plier ces griffes, si nécessaire.
Doble estas uñas, si es necesario.
Buig indien nodig deze lipjes om.



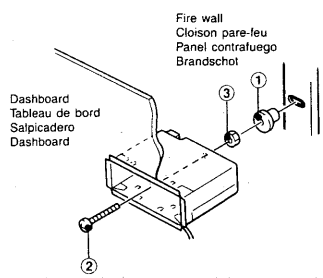
4 Secure the unit.
Fixer l'appareil.
Asegure la unidad.
Schuif het apparaat in het inbouwframe.



Push in the unit until it is locked firmly.
Pousser l'appareil jusqu'à verrouillage ferme.
Empuje la unidad hasta que se enganche firmemente.
Druk het apparaat aan tot het stevig blijft zitten.

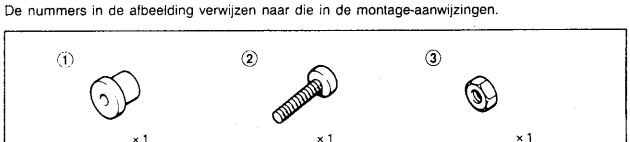
To Support the Unit
Pour supporter l'appareil
Para fijar la unidad
Ondersteunen van het apparaat

Example
Exemple
Ejemplo
Voorbeeld



Supplied Mounting Hardware
Matériel de montage fourni
Ferretería de montaje suministrada
Bijgeleverde montage-onderdelen

The numbers in the list are keyed to those in the instructions.
Les numéros de la liste correspondent à ceux des instructions.
Los números en la lista corresponden a los de las instrucciones.
De nummers in de afbeelding verwijzen naar die in de montage-aanwijzingen.



Connections Connexions Conexiones Aansluitingen

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **red** power input lead only after all other leads are connected. And be sure to connect it to the positive 12 V power terminal. It will be energized when the ignition key is set to the accessory position.
- **Run all ground wires to a common ground point.**

Attention

- Cet appareil est conçu uniquement pour un fonctionnement sur courant continu de 12 volts avec masse négative.
- Avant d'effectuer les connexions, débrancher la borne de masse de la batterie de voiture pour éviter un court-circuit.
- Connecter le fil d'alimentation **rouge** uniquement une fois que tous les autres fils ont été raccordés. S'assurer de le raccorder à la borne positive de 12 volts. L'alimentation est fournie lorsque la clé de contact est mise sur la position accessoire.
- **Faire cheminer tous les fils de masse vers une masse commune.**

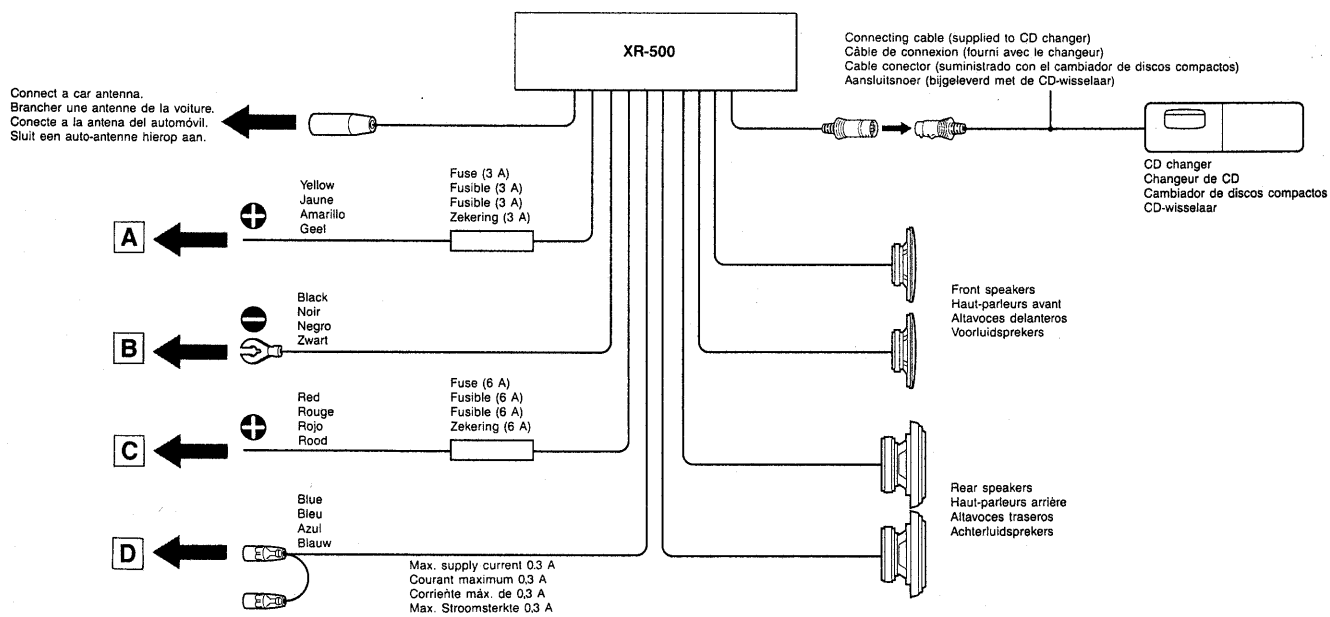
Precauciones

- Esta unidad ha sido diseñada para funcionar solamente con 12 V CC y negativo a masa.
- Antes de realizar las conexiones, desconecte el terminal de masa de la batería del automóvil a fin de evitar cortocircuitos.
- Conecte el conductor de entrada de alimentación **rojo** después de haber conectado los demás. No se olvide de conectarlo a un terminal de alimentación de 12 V positivo. Este conductor deberá energizarse al poner la llave de encendido en la posición para accesorios.
- **Conecte todos los teminales de masa a un punto común del automóvil.**

Opgelet

- Dit apparaat mag alleen gebruikt worden op gelijkstroomvoeding van een 12 V auto-accu met negatieve aarding.
- Alvorens te beginnen met het maken van aansluitingen, dient de aardklem van de auto-accu te worden losgemaakt. Dit om kortsluiting te voorkomen.
- Sluit de **rode** stroomdraad pas aan nadat alle andere aansluitingen zijn gemaakt. Zorg ervoor dat deze stroomdraad op de positieve 12 V accu-aansluiting wordt aangesloten. De draad komt dan onder spanning te staan, wanneer de kontaktsleutel wordt omgedraaid.
- **Sluit alle aarddraden op een gemeenschappelijk aardpunt aan.**

Connection Diagram
Schéma des connexions
Diagrama de conexiones
Aansluitschema

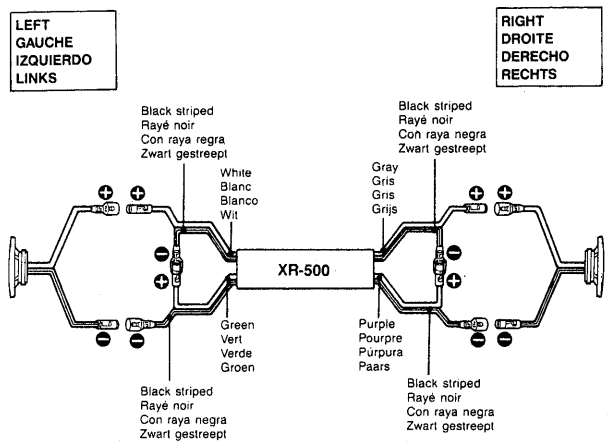


[A] : to the +12 V power terminal which is energized at all times	[A] : à la borne d'alimentation de +12 volts qui est toujours alimentée	[A] : a un terminal de alimentación de +12 V que esté siempre energizado	[A] : naar de (+) 12 V accu-aansluiting, die altijd onder spanning staat
[B] : to a metal point of the car	[B] : à un point métallique de la voiture	[B] : a un punto metálico del automóvil	[B] : naar een metalen deel van de auto
[C] : to the +12 V power terminal which is energized with the ignition key in the accessory position	[C] : a la borne d'alimentation de +12 volts qui est alimentée lorsque la clé de contact est sur la position accessoire	[C] : a un terminal de almentación de +12 V que se energice al poner la llave de encendido en la posición para accesorios	[C] : naar de (+) 12 V accu-aansluiting, die onder spanning komt te staan bij het omdraaien van de kontaktsleutel
[D] : to the power antenna relay control box	[D] : au boîtier de contrôle de relais d'antenne électrique	[D] : a la caja de control por relé de la antena motorizada	[D] : naar het relaishuis voor de automatische antenne

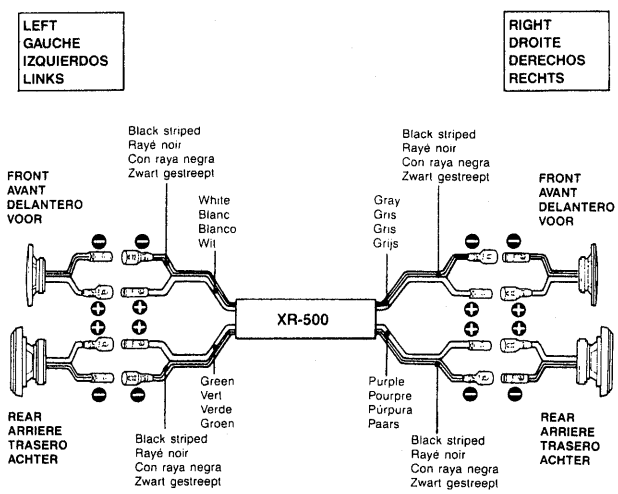
Cord color	Couleur des cordons	Color de los conductores	Kleurcode van de draden
Red: Power input lead	Rouge: Fil d'entrée d'alimentation	Rojo: Conductor de entrada de alimentación	Rood: Stroomdraad
Yellow: Power input lead	Jaune: Fil d'entrée d'alimentation	Amarillo: Conductor de entrada de alimentación	Geel:. Stroomdraad
Blue: Power antenna relay control	Bleu: Fil de contrôle de relais d'antenne	Azul: Conductor de control por relé de la antena motorizada	Blauw: Relaisdraad voor automatische antenne
Black: Ground wire	Noir: Fil de masse	Negro: Conductor de puesta a carrocería	Zwart: Aarddraad

Speaker Connection
Connexion des haut-parleurs
Conexión de los altavoces
Aansluiten van de luidsprekers

2-speaker connection
Connexion de deux haut-parleurs
Conexión de un sistema de 2 altavoces
Aansluiten van 2 luidsprekers



4-speaker connection
Connexion de quatre haut-parleurs
Conexión de un sistema de 4 altavoces
Aansluiten van 4 luidsprekers



Notes on speaker connection

- Use speakers with an impedance of 3.2 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.
- Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.

Notas sobre la conexión de altavoces

- Emplee un sistema de altavoces de 3,2 a 8 ohmios de impedancia y con la potencia admisible adecuada. De lo contrario, los altavoces podrían dañase.
- No conecte los terminales de los altavoces al chasis del automóvil ni conecte los terminales del altavoz derecho a los del izquierdo.

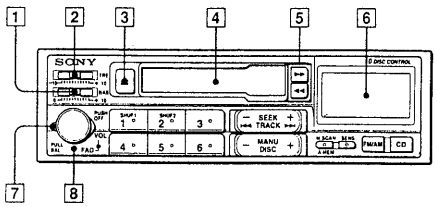
Remarques sur la connexion des haut-parleurs

- Utiliser des haut-parleurs d'une impédance de 3,2 à 8 ohms et ayant une puissance nominale adéquate. Dans le cas contraire, les haut-parleurs pourraient etre endommagés.
- Ne pas raccorder les bornes du système de haut-parleur au châssis de la voiture et ne pas non plus raccorder les bornes des haut-parleurs de droite avec celles des haut-parleurs de gauche.

Opmerkingen betreffende het aansluiten van de luidsprekers

- Gebruik luidsprekers met een impedantie van 3,2 to 8 Ohm en let op dat die het vermogen van de versterker kunnen verwerken. Als dit wordt verzuimd, kunnen de luidsprekers ernstig beschadigd raken.
- Verbind in geen geval de aansluitingen van de luidsprekers met het chassis van de auto en sluit de aansluitingen voor de rechter en linker luidspreker niet op elkaar aan.

Location and Function of Controls



Refer to the pages in ● for details.

1 **BAS (bass) boost control**
Slide to the right to boost the bass.

2 **TRE (treble) control**
Slide to the right to increase and left to decrease the treble. It can be locked in the center position.

3 **⏏ (eject) button**
Press to stop tape playback and eject the cassette.

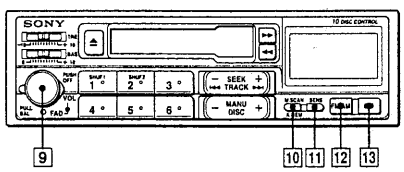
4 **Cassette insertion door**

5 **◄◄/►► (fast winding) buttons/DIR (tape transport direction change) buttons ⑨**

6 **Display window**

7 **FAD (fader) control**
Turn clockwise to decrease the volume of the rear speakers or counterclockwise to decrease the volume of the front speakers.

8 **Reset button**
Press this button when you use this unit for the first time, when you have changed the car battery or when the buttons of this unit do not function. The reset button is effective only when the unit is mounted in the bracket.



9 **PUSH OFF button/VOL (volume) control/PULL BAL (balance) control**

PUSH OFF (power off) button	Press to turn off the unit.
VOL (volume) control	Turn clockwise to increase and counterclockwise to decrease the volume.
PULL BAL control	While pulling the control knob, turn clockwise to decrease the volume of the left speaker(s), and turn counterclockwise to decrease the volume of the right speaker(s).

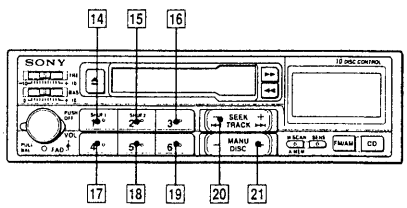
10 **M.SCAN (memory scan)/A.MEM (automatic memory) button ⑬ ⑮**

M.SCAN	Press for a moment to scan the preset stations automatically.
A.MEM	Press for more than two seconds to memorize the stations automatically.

11 **SENS (sensitivity) button ⑪**

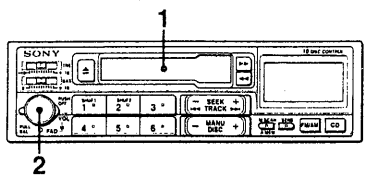
12 **FM/AM band select button ⑩ ⑫ ⑬ ⑭ ⑮**

13 **CD (disc play) button ⑯**

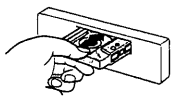


	During disc play	During radio reception
14	**SHUF1 (shuffle 1) button ⑱**	Preset number buttons ⑭ ⑮
15	**SHUF2 (shuffle 2) button ⑱**	
16	—	
17	—	
18	—	
19	—	
20	**TRACK (disc track change) button ⑰**	**SEEK (automatic tuning) button ⑩ ⑭**
21	**MANU(manual search)/DISC(disc change) button ⑯ ⑱**	**MANU (manual tuning) button ⑫ ⑭**

Tape Playback



1 **Insert a cassette.**



Playback starts automatically.

2 **Adjust the volume.**

The side of the cassette being played back
This unit plays back both sides of the cassette repeatedly. The indication on the display window shows which side of the cassette is currently being played back.

Direction indication	Side
▶	The side facing upward
◁	The side facing downward

Other Operations

To listen to the other side of the cassette → Press both ▶▶ and ◀◀ simultaneously.

To wind the tape rapidly

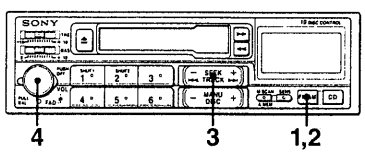
Direction indication	To advance	To rewind
▶	Depress ▶▶ .	Depress ◀◀ .
◁	Depress ◀◀ .	Depress ▶▶ .

To resume playback, press ▶▶ or ◀◀ lightly, so as not to depress it.

To eject a cassette → Press ⏏

Note
You cannot turn off the unit when a cassette is inserted.

Automatic Tuning



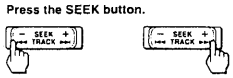
1 **Press to turn on the unit*.**

FM/AM

2 **Press to select the desired band: FMI, FMII, FMIII or AM.**

FM/AM

3 **Press the SEEK button.**



For lower frequencies For higher frequencies

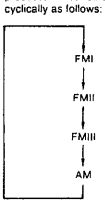
The scanning will stop when a station is received. Press the button repeatedly until the desired station is received.

4 **Adjust the volume.**

* When a cassette is inserted, press the ⏏ (eject) button.

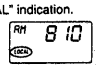
The receivable frequencies of FMI, FMII and FMIII are the same
Therefore, 18 stations can be memorized on FM.

Each time the FM/AM button is pressed, the bands changes cyclically as follows:



When there are too many stations and the scanning stops too frequently during the automatic tuning

Press the SENS button lightly to get the "LOCAL" indication.



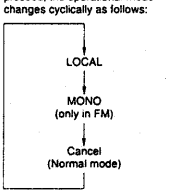
Only the stations with relatively strong signals will be tuned in.

When the FM stereo program is too weak and noisy

Press the SENS button lightly to get the "MONO" indication.

The noise will be reduced, but the sound will be monaural instead.

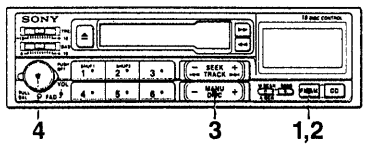
Each time the SENS button is pressed, the operational mode changes cyclically as follows:



When the FM stereo program with sufficient signal strength is tuned in

The program will be automatically received in stereo.

Manual Tuning



1 **Press to turn on the unit*.**

FM/AM

2 **Press to select the desired band: FMI, FMII, FMIII or AM.**

FM/AM

3 **Press the MANU button for more than 0.5 second.**

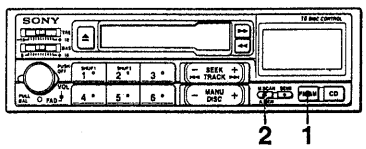
For lower frequencies For higher frequencies

4 **Adjust the volume.**

*When a cassette is inserted, press the ⏏ (eject) button.

Warning
While driving, keep your eyes on the road and use the automatic tuning or memory preset tuning !

Memory Preset Tuning



You can memorize a total of 24 stations (6 stations per band) on the preset number buttons.

Memorizing the Stations Automatically
(Automatic Memory Function)

1 **Press to select the desired band: FMI, FMII, FMIII or AM.**

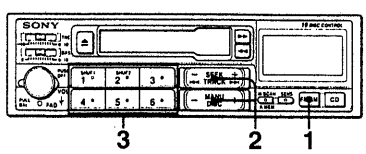
FM/AM

2 **Press until the "MEM" indication starts flashing.**

M.SCAN A.MEM

The unit will start scanning the selected band and memorizes the tuned stations on the preset number buttons 1 through 6 automatically.

Memory Preset Tuning



Memorizing Only Desired Stations Manually

1 **Press to select the desired band.**

FM/AM

2 **Press to tune in a desired station.**

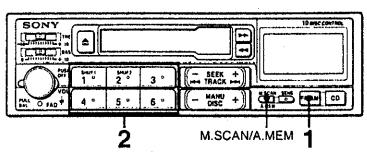
SEEK TRACK or MANU DISC

3 **Keep the desired preset number button pressed until the "MEM" indication comes on.**

Example: To memorize on the preset number button 1. The number of the pressed preset number button will be displayed. The "MEM" indication will appear to show that the station has been memorized. (The "MEM" indication will disappear in a few seconds.)

Repeat steps 2 and 3 for each preset number button.

Important
Each preset number button has only one memory per band. A previously memorized station will be erased if you enter a new station on the same band on the same preset number button.



Receiving a Preset Station

1 **Press to select the desired band.**

FM/AM

2 **Press lightly to receive the desired station.**

1 — 6

Note
If a preset number button is kept pressed, the currently received station will be memorized and the previous memory will be erased.

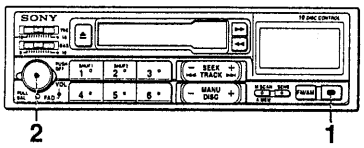
Checking What is Being Broadcasted on the Preset Stations

Press M.SCAN A.MEM lightly.

Each memorized station will be scanned for five seconds in order. (When the broadcast signal of the memorized station is too weak, it cannot be received.)

Note
If the M.SCAN/A.MEM button is kept pressed, the button will function as the A.MEM (automatic memory) button and the memories of the currently received station and the memories of the succeeding preset number buttons will be altered.

Disc Playing *(when the optional Sony CD changer is connected)*



Before operating, insert a disc magazine with discs into the CD changer.

1 **Press to start the disc play*.**

CD

2 **Adjust the volume.**

*When a cassette is inserted, press the ⏏ (eject) button.

Other Operations

To listen to another disc in the disc magazine → MANU DISC + or MANU DISC −

If you press it for more than 0.5 second, it will then function as the MANU (manual search) button.

Locating the Beginning of a Track

Press the TRACK button during CD play.

To listen to the current track again from the beginning → SEEK TRACK −

If the button is kept pressed, the beginnings of the previous tracks will be located.

To listen to the next track from the beginning → SEEK TRACK +

If the button is kept pressed, the beginnings of the succeeding tracks will be located.

Note
When you keep pressing the TRACK button and come to either the beginning or the end of a disc, you will not be able to proceed any further.

Searching for a Particular Point on a Track *(Manual Search)*

To fast forward → MANU DISC + (Keep on pressing.)

Release the button at the desired point.

To reverse at high speed → MANU DISC − (Keep on pressing.)

Release the button at the desired point.

The elapsed playing time of the track will be displayed during the manual search.

Playing the Discs Randomly

To play the tracks on a disc in random order (Shuffle play 1) → SHUF 1

All the tracks on a disc will be played in random order. When all the tracks on the disc have been played, it will be replaced with the next disc.

To play the tracks on all the discs in random order (Shuffle play 2) → SHUF 2

All the tracks on all the discs in the disc magazine will be played in random order.

To resume normal playback
Press the button (SHUF1 or SHUF2) again.

Maintenance

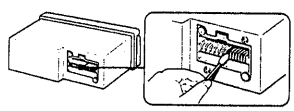
Fuse Replacement

If the fuse blows, check the power connections and replace the fuse. If the fuse blows again after the replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.

Warning
Use the specified amperage fuse.
Use of a higher amperage fuse may cause serious damage.

Cleaning the Connector

To keep the best possible sound quality, clean the metallic part of the connector at the rear of the unit periodically using commercially available head cleaning fluid or alcohol and a cotton swab.



Cleaning the Head and the Tape Path

Prolonged use may contaminate the tape head and the tape path. Contamination may cause sound drop-outs during playback.
Clean the tape head and the tape path every two weeks or so to enjoy optimum hi-fi stereo sound.
Use a commercially available cleaning cassette.

SECTION 2
ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENT

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:
   PB head — Pinch roller
   Idler — Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4 V).
6. Control knob setting.
   BALANCE ..... Mechanical Center
   TONE ..... TREBLE: Mechanical Center
   BASS: Minimum
   VOLUME ..... +5.5 dB Position

Torque Measurement

Measure the torque at a supply voltage of 14.4 V DC.

Mode	Torque meter	Meter reading
FWD	CQ-102C	25 to 55 g•cm (0.35 to 0.77 oz•inch)
REV	CQ-102RC	25 to 55 g•cm (0.35 to 0.77 oz•inch)
FF, REW	CQ-201B	55 to 150 g•cm (0.77 to 2.1 oz•inch)
Back Tension	CQ-102C	1.5 to 4 g•cm (0.02 to 0.05 oz•inch or less)

0 db = 0.775 V

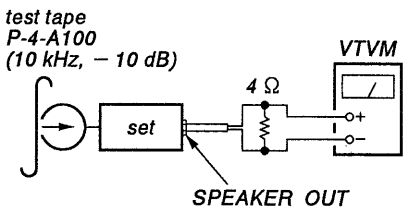
2-2. ELECTRICAL ADJUSTMENTS

DECK SECTION

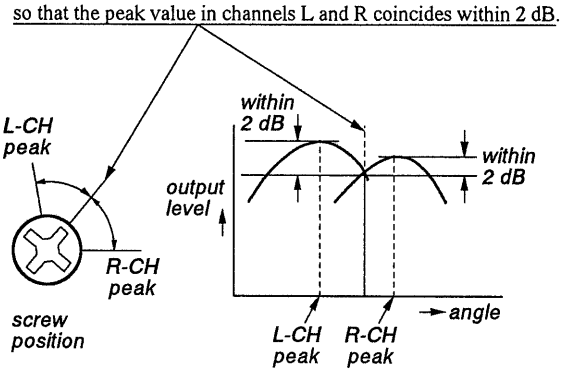
PB Head Azimuth Adjustment

Procedure:

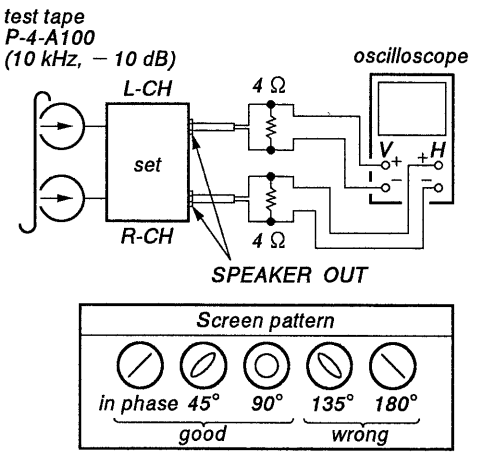
1. Put the set into the FWD PB mode.



2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 2 dB.



3. Check the phase in the PB mode.



4. Repeat the above adjustment for the REV PB mode.
5. Check that output level difference between FWD PB mode and REV PB mode is within 4 dB μ.

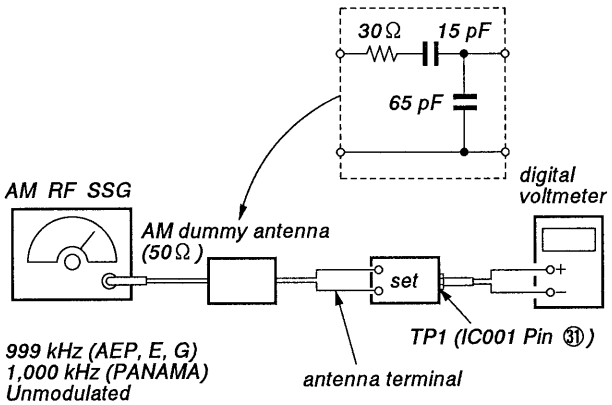
Adjustment Location: Mechanism Deck (See page 13)

TUNER SECTION

Cautions during repair
When the front end is defective, replace it by a new one because its internal block is difficult to repair.

AM Auto Scan/Stop Level Adjustment

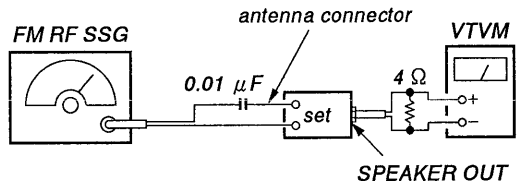
Setting:
BAND switch : AM



Procedure:
1. Tune in 999 kHz (1,000 kHz).
2. Adjust with VR101 so that the reading on digital voltmeter becomes 2.7 – 2.8 V DC. (See page 13)
3. Set the output of AM RF SSG to 26 dB (18.8 μV) (DX) or 40 dB (100 μV) (LOCAL).
4. Press "SEEK +" button and check scanning not to be stopped.
5. Set the output of AM RF SSG to 33 dB (48 μV) (DX) or 60 dB (1 mV) (LOCAL).
6. Press "SEEK +" button and check scanning should be stopped.

FM Limiter Adjustment

Setting:
BAND switch: FM



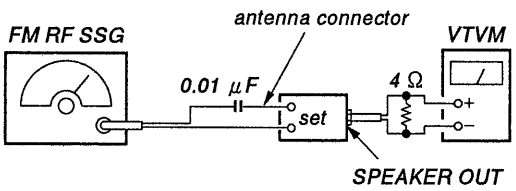
Carrier frequency: *98.0 MHz (AEP, E, G)*
98.1 MHz (PANAMA)
Mode: *Monaural*
Modulation: *1 kHz, 75 kHz deviation*
Output level: *66 dB (1.9 μV)*

Procedure:
1. Tune in 98.0 MHz (98.1 MHz).
2. Adjust with the volume control so that the reading on VTVM becomes +3 dB (1.4 V).
3. Set the output of FM RF SSG to 19 $\pm\frac{2}{3}$ dB (5.5 – 10.4 μV).
4. Adjust with VR2 on TU101 so that the reading on VTVM becomes 0 dB (1 V). (See page 13)

FM Noise Level Adjustment

Setting:

BAND switch : FM



Carrier frequency: *98.0 MHz (AEP, E, G)*
98.1 MHz (PANAMA)
Mode: *Monaural*
Modulation: *1 kHz, 75 kHz deviation*
Output level: *66 dB (1.9 μV)*

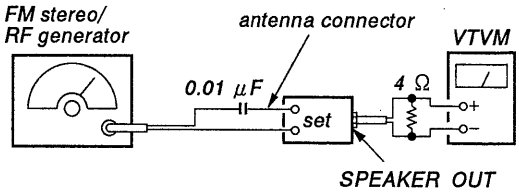
Procedure:

1. Tune in 98.0 MHz (98.1 MHz).
2. Adjust with the volume control so that the reading on VTVM becomes +3 dB (1.4 V).
3. Set FM RF SSG to 108.0 MHz (107.9 MHz), −16 dB (0.19 μV).
4. Tune in 108.0 MHz (107.9 MHz).
5. Adjust with VR1 on TU101 so that the reading on VTVM becomes more than 20 dB (10 V).

FM Stereo Separation (70 dB) Adjustment

Setting:

BAND switch : FM



Carrier frequency: *98.0 MHz (AEP, E, G)*
98.1 MHz (PANAMA)
Output level: *66 dB (1.9 mV)*
Modulation: *main; 1 kHz, 33.75 kHz deviation*
sub; 1 kHz, 33.75 kHz deviation
19 kHz pilot; 7.5 kHz deviation

Procedure:

Adjust VR3 on TU101 for a best stereo separation at a SPEAKER OUT . More than 28 dB is good.

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV1 for minimum reading.

L-CH Stereo separation: Ⓐ − Ⓑ
R-CH Stereo separation: Ⓒ − Ⓓ
The separations of both channels should be equal.

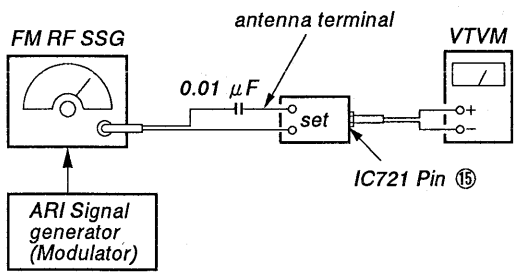
Specification Value: More than 25 dB.

Adjustment Location: TU101 on MAIN Board

ARI Level Adjustment (XR-502)

Setting:

BAND switch : FM
Frequency: 98.0 MHz



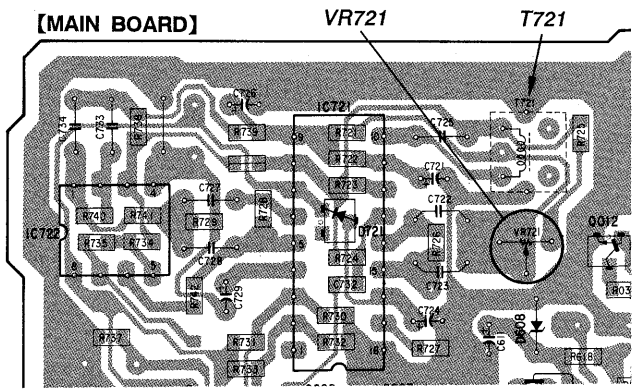
Carrier frequency: 98.0 MHz
Output level: 60 dB
Modulation: 75 kHz deviation
ARI modulation: SK; 1.3%
DK; 30%
BK; 60%

Procedure:

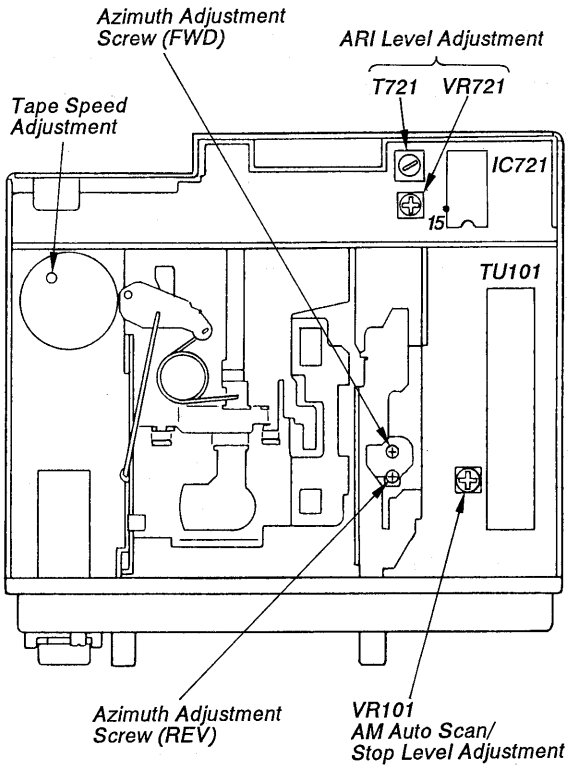
1. Adjust T721 so that the level of 125 Hz signal becomes maximum.
2. Adjust VR721 in the same way.

Specification : 1 Vrms or more.

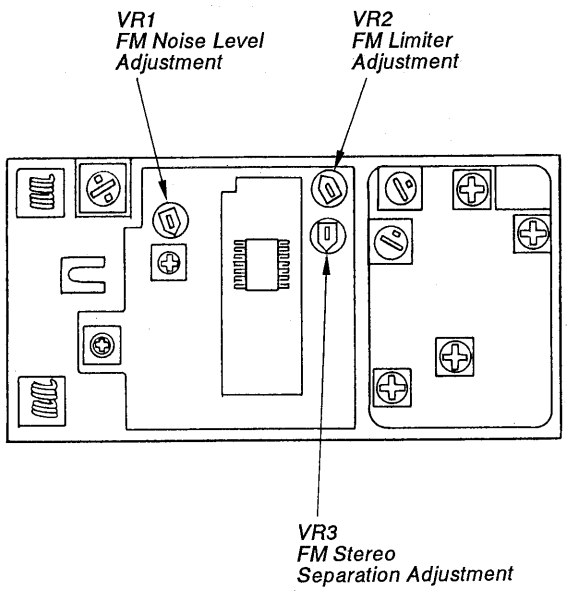
Adjustment Location: MAIN Board



• Adjusting Parts Location



TU101
Tuner Unit



SECTION 3
DIAGRAMS

3-1. IC001 μPD75116GF-F01-3BE (MICRO COMPUTER)

The μPD75116GF-F01-3BE function are described below.

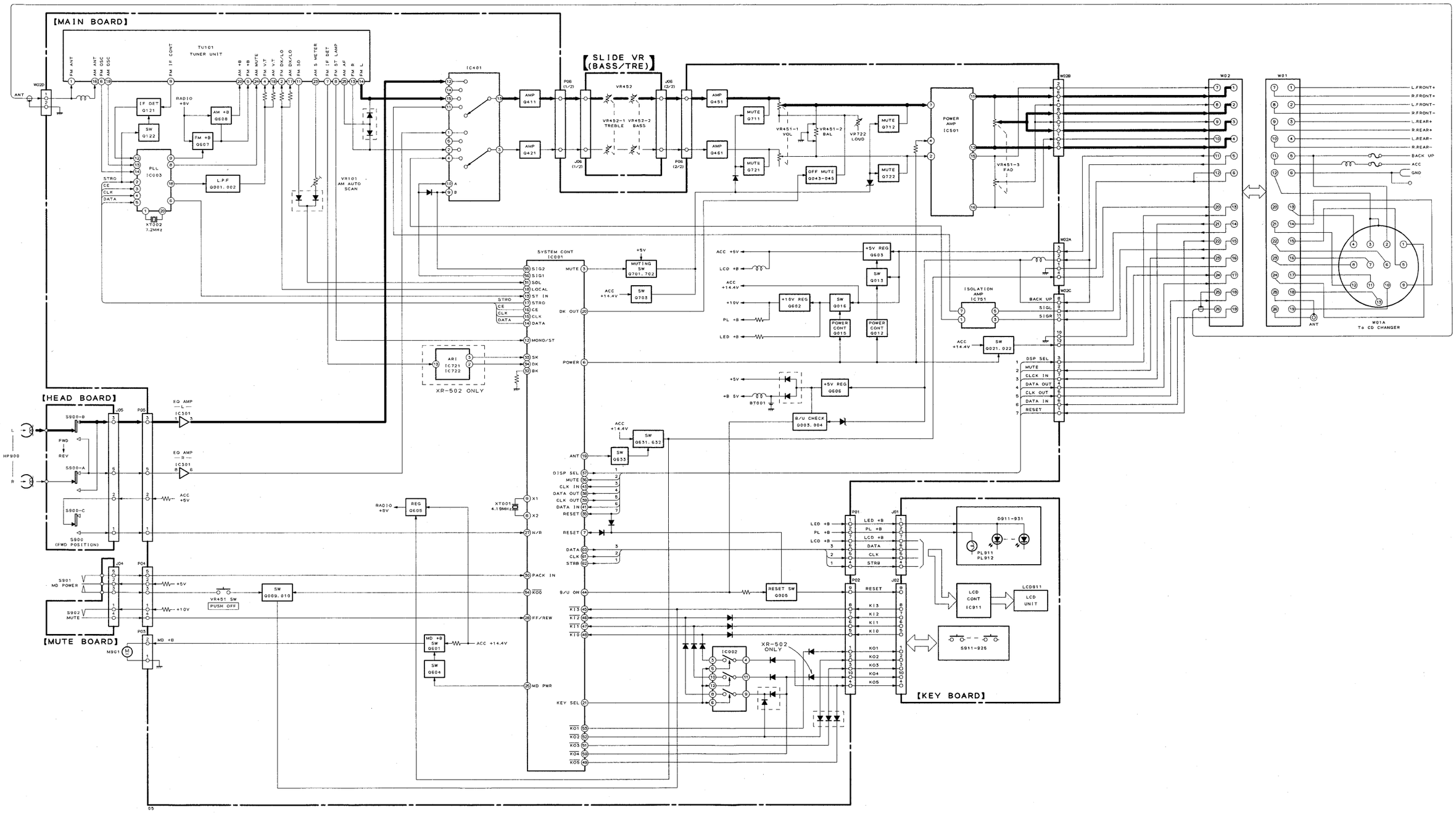
- Description

Pin No.	Name	I/O	Description
1	VOL CLK	O	Clock output for electoronic volume. DSP CLOCK — Control signal outputs for electronic volume and DSP (Digital Signal Processor).
2	VOL DATA	O	DATA output for Electronic volume and DSP.
3	MUTE	O	AUDIO MUTE output. High: MUTE ON.
4	–	–	Not used.
5	ILL	O	ILLUMI output. High: ILLUMI ON.
6	POWER	O	SYSTEM POWER output. POWER ON/OFF for the whole system of the set, electronic volume, PLL IC, and LCD driver.
7	$\overline{\text{RESET}}$	–	RESET signal
8	X2	–	4.19 MHz
9	X1	–	
10	ACC ON	I	ACC input
11	HANDLE ON	I	HANDLE SW input.
12	$\overline{\text{STEREO}}$/ $\overline{\text{MONO}}$	I/O	STEREO input: When STEREO is selected on FM, "ST" is indicated at low input. MONAURAL output: When FORCED MONO is selected on FM, low output.
13	$\overline{\text{PLL ST IN}}$	I	PLL automatic search stop signal input.
14	PLL DATA	O	PLL DATA output. } Serial data output for PLL cantrol.
15	PLL CLK	O	PLL CLOCK output } Serial data output for PLL cantrol.
16	PLL CE	O	PLL CE output } Serial data output for PLL cantrol.
17	PLL STRQ	O	PLL If figures request signal output. High: Request on.
18	LOCAL	O	LOCAL/DX switching on AM. High: LOCAL output.
19	ANT	O	ANTENNA output. When TUNER, SDK, ATA, are on, high output.
20	DK OUT	O	SDK DK station receiving output. When DK signal is in at SDK on, high output.
21	KEY SEL	O	KEY INPUT SELECT signal. Initial diode switch is in: High output. Key scan: Low output.
22	–	–	Not used.
23	–	–	Not used.

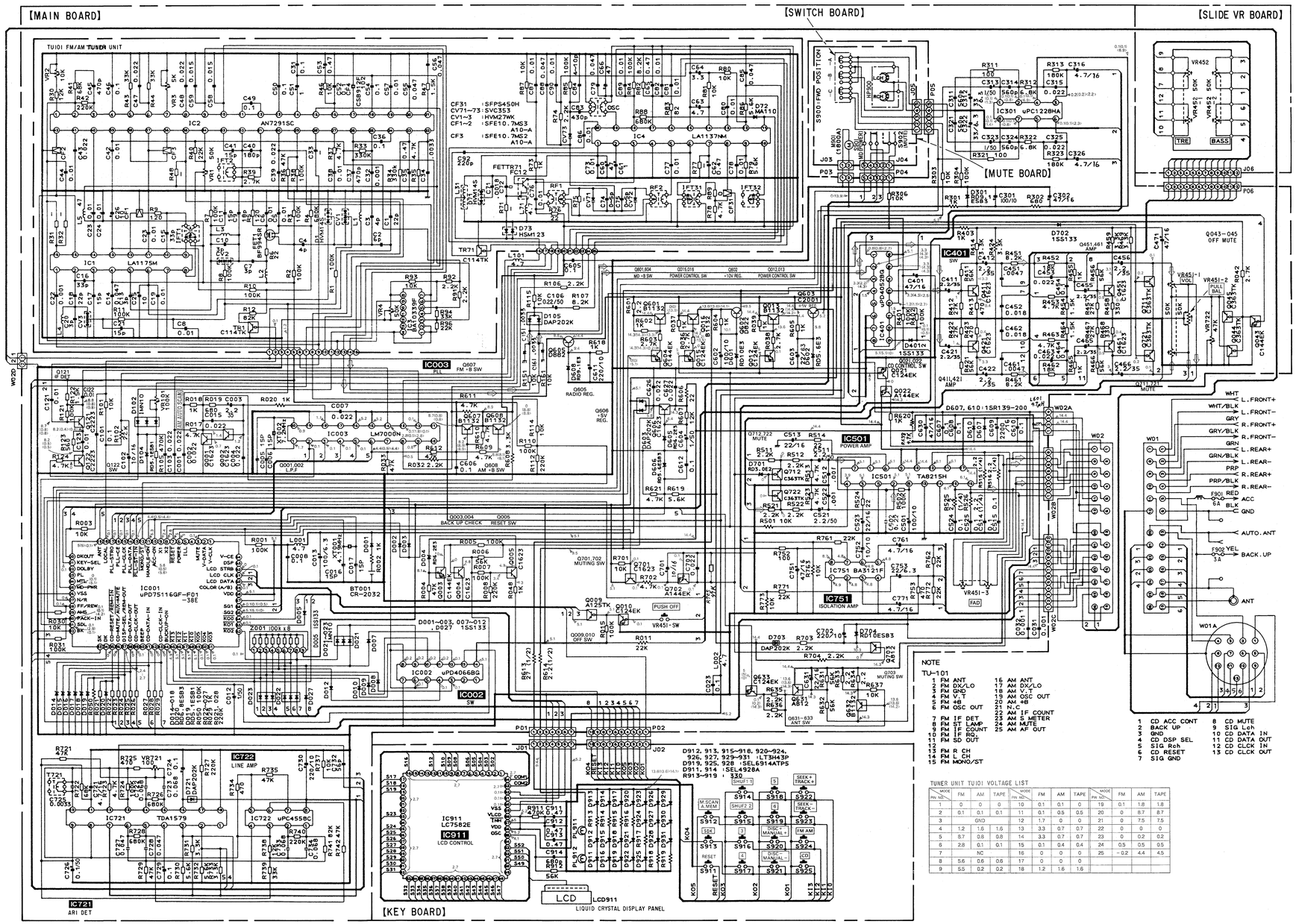
Pin No.	Name	I/O	Description
24	–	–	Not uesd.
25	MD POWER	O	MD POWER output. For MD POWER control. High on tape playback state. Low on stop state.
26	Vss	–	GND
27	$\overline{N}$/R	I	Tape Normal/Reverse detection input. Low on normal side.
28	FF•REW	I	High signal is in. When tape is FF/REW position.
29	AMS	I	Tape signal (tune) presence detection input. When there is a signal (a tune), it is high.
30	PACK IN	I	When the cassette is packed in, high signal is in.
31	SDL	I	SDL signal during tuner receiving. Used as SDL signal during BEST TUNING MEMORY. When there is a station, high signal is in.
32	BK	I	On SDK ON, counts BK and indicatets area. Connects to ground when it isn't ARI system.
33	SK	I	When receiving the station has high SK, indicates "SK".
34	DK	I	When receiving the station broadcasting ARI, high signal is in.
35	CD CHECK $\overline{REM•IN}$	I	CD CHECK (use this port both as $\overline{REM-IN}$). High signal is in when CD is connected.
36	CD MUTE $\overline{AUX-MUTE}$	I	CD MUTE (use this port both as $\overline{AUX-MUTE}$). CD MUTE input. MUTE ON at high.
37	DISP SEL REM-OUT	O	DISP SEL (use this port both as REM-OUT). CD changer control signal output.
38	CD DATA OUT	O	Serial data output to CD changer.
39	CD CLK OUT	O	Serial clock output to CD changer.
40	BEEP	O	Buzzer output. (Approx. 2 kHz and 700 Hz, two kinds of signal output.) On Test Mode, 2,048 Hz signal output.
41	CD DATA IN	I	Serial data input from CD changer.
42	–	–	Not used.
43	CD CLK IN	I	Serial clock input from CD changer.
44	BACK UP ON	I	BACK UP input.

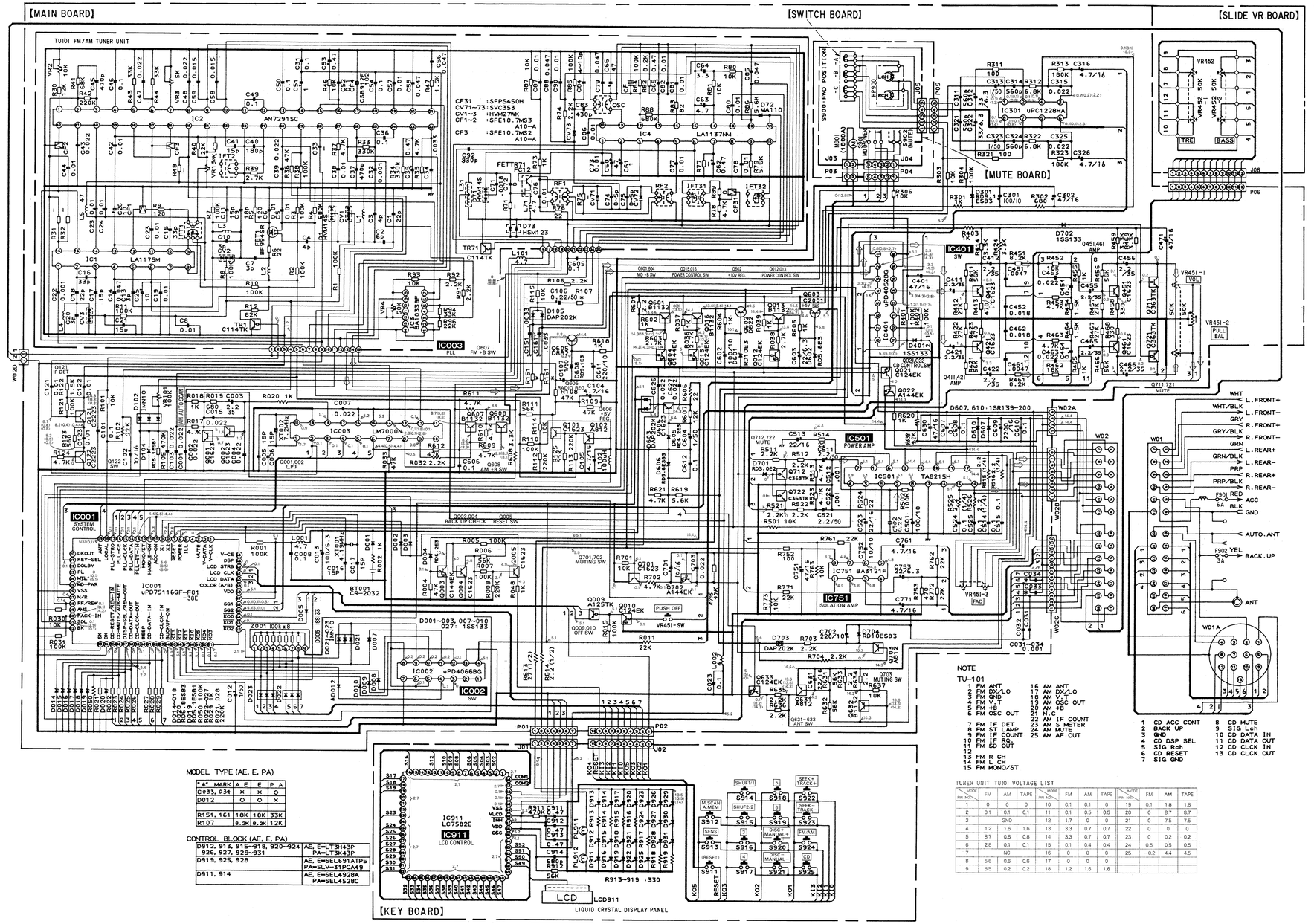
<table>
<tr><th>Pin No.</th><th>Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>45
|
48</td><td>$\overline{KIN3}$
|
$\overline{KIN0}$</td><td>I/O</td><td>Key matrix input. Initial diode switch output.
Activates at low.</td></tr>
<tr><td>49
|
52</td><td>$\overline{KOUT5}$
|
$\overline{KOUT2}$</td><td>I/O</td><td>Key matrix output. Initial diode switch input.
Activates at low.</td></tr>
<tr><td>53, 54</td><td>$\overline{KOUT1, 0}$</td><td>O</td><td>Key matrix output.
Activates at low.</td></tr>
<tr><td>55, 56</td><td>SIG 2, 1</td><td>O</td><td>Audio signal select output.
<table>
<tr><th colspan="2">SOURCE</th><th>SIG2</th><th>SIG1</th></tr>
<tr><td rowspan="2">TAPE</td><td>N</td><td>L</td><td>L</td></tr>
<tr><td>R</td><td>L</td><td>H</td></tr>
<tr><td colspan="2">TUNER</td><td>H</td><td>L</td></tr>
<tr><td colspan="2">CD/AUX</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>57</td><td>NC</td><td>–</td><td>(Short-circuit to V_{DD})</td></tr>
<tr><td>58</td><td>V_{DD}</td><td>–</td><td>Power source.</td></tr>
<tr><td>59</td><td>COLOR</td><td>O</td><td>Illumination amber/green select.
High: Green
Low: Amber</td></tr>
<tr><td>60</td><td>LCD DATA</td><td>O</td><td>LCD data output.</td></tr>
<tr><td>61</td><td>LCD CLK</td><td>O</td><td>LCD clock output.</td></tr>
<tr><td>62</td><td>LCD CE</td><td>O</td><td>LCD CE output.</td></tr>
<tr><td colspan="4">LCD driver control output.</td></tr>
<tr><td>63</td><td>DSP AO</td><td>O</td><td>DSP (Digital Signal Processor) control signal output.</td></tr>
<tr><td>64</td><td>VOL CE</td><td>O</td><td>Electronic volume control signal output.</td></tr>
</table>

3-2. BLOCK DIAGRAM



XR-502


[MAIN BOARD]
[SWITCH BOARD]
[SLIDE VR BOARD]
[MUTE BOARD]
[KEY BOARD]
TUNER FM/AM TUNER UNIT
IC1 LA1175M
IC2 AN7291SC
IC3 LM7000N
IC001 uPD75116GF-F01-3BE
IC002 uPD40668G
IC401 SW
IC501 TA8215H POWER AMP
IC751 BA3121F ISOLATION AMP
IC721 ARI DET
IC722 LINE AMP
IC911 LC7582E
IC911 LCD CONTROL
LCD911 LIQUID CRYSTAL DISPLAY PANEL
IC301 uPC1228HA
IC1301 LA1137NM
BT001 CR-2032
TU-101
TUNER UNIT TUIOI VOLTAGE LIST
Note on Schematic Diagram:


【MAIN BOARD】
【SWITCH BOARD】
【SLIDE VR BOARD】
【MUTE BOARD】
【KEY BOARD】
TU101 FM/AM TUNER UNIT
IC001 SYSTEM CONTROL
IC002 SW
IC003 PLL
IC501 POWER AMP
IC751 ISOLATION AMP
IC401 SW
IC911 LCD CONTROL
LCD LIQUID CRYSTAL DISPLAY PANEL
LCD911
W01 L. FRONT+ L. FRONT− R. FRONT+ R. FRONT− L. REAR+ L. REAR− R. REAR+ R. REAR− ACC GND AUTO. ANT BACK. UP ANT
W02A WHT WHT/BLK GRY GRY/BLK GRN GRN/BLK PRP PRP/BLK RED BLK YEL
W02B
W02C
W01A
D607, 610: 1SR139-200
D702 1SS133
D401 1SS133
D701 RD3.0EB2
D703 DAP202K
D704 RD10ESB3
D101~103, 105~107, 109~111 1SS133
D001~003, 007~010 027 1SS133
D004~006 RD5.6ES3B
D104 RD10ES1B
D011 RD5.1ES3B
D012 RD6.2ES3B
D014~018 RD5.6ES3B
D019~026 RD5.1ES3B
D028~031 RD5.6ES3B
D032 RD6.2ES3B
D033 RD5.1ES3B
D034~037 RD5.6ES3B
D038 RD6.2ES3B
D039 RD5.1ES3B
D040 RD5.6ES3B
D041 RD6.2ES3B
D042 RD5.1ES3B
D043 RD5.6ES3B
D044 RD6.2ES3B
D045 RD5.1ES3B
D046 RD5.6ES3B
D047 RD6.2ES3B
D048 RD5.1ES3B
D049 RD5.6ES3B
D050 RD6.2ES3B
D051 RD5.1ES3B
D052 RD5.6ES3B
D053 RD6.2ES3B
D054 RD5.1ES3B
D055 RD5.6ES3B
D056 RD6.2ES3B
D057 RD5.1ES3B
D058 RD5.6ES3B
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D061 RD5.6ES3B
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D065 RD6.2ES3B
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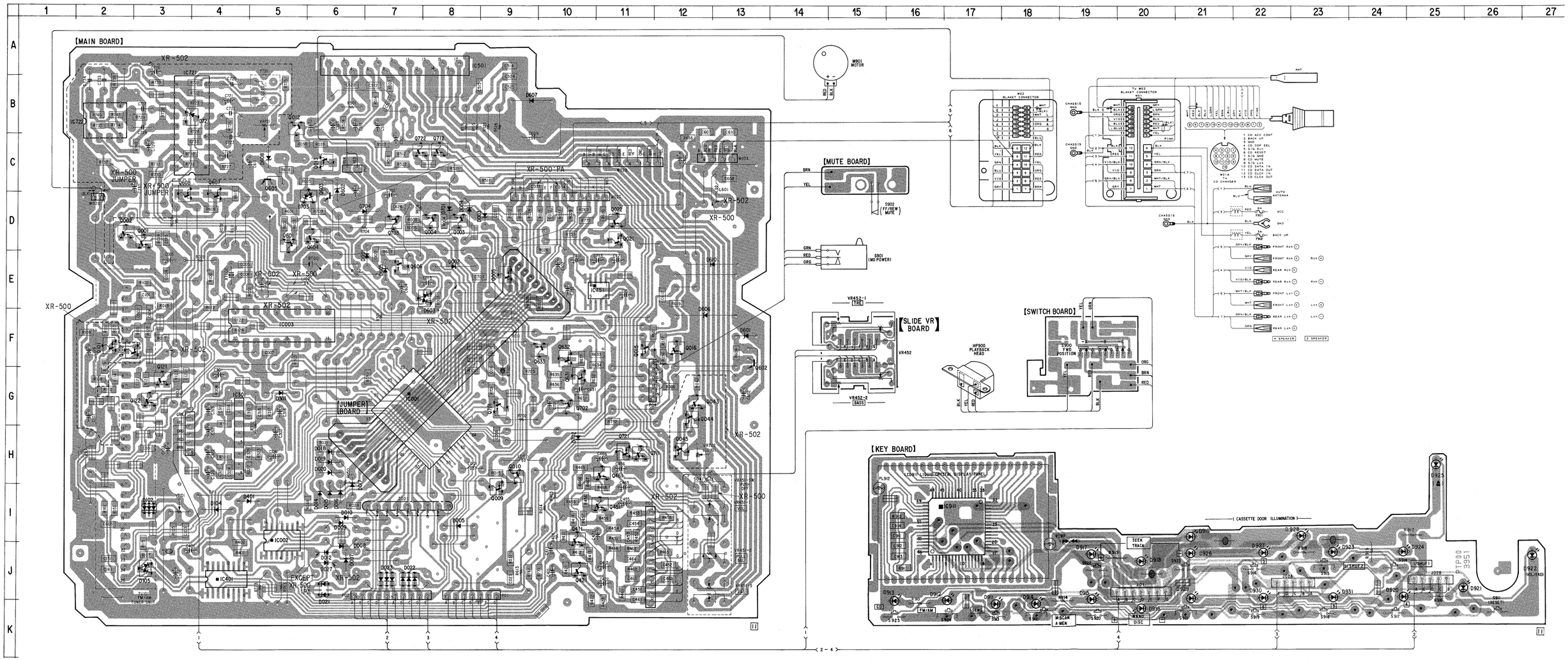
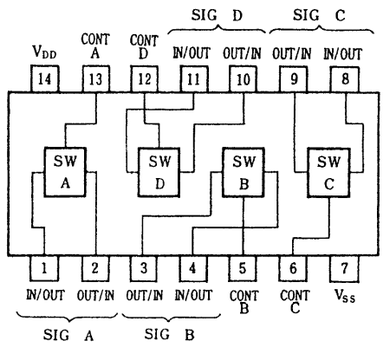
D067 RD5.6ES3B
D068 RD6.2ES3B
D069 RD5.1ES3B
D070 RD5.6ES3B
D071 RD6.2ES3B
D072 RD5.1ES3B
D073 HSM123
D074 RD5.6ES3B
D075 RD6.2ES3B
D076 RD5.1ES3B
D077 RD5.6ES3B
D078 RD6.2ES3B
D079 RD5.1ES3B
D080 RD5.6ES3B
D081 RD6.2ES3B
D082 RD5.1ES3B
D083 RD5.6ES3B
D084 RD6.2ES3B
D085 RD5.1ES3B
D086 RD5.6ES3B
D087 RD6.2ES3B
D088 RD5.1ES3B
D089 RD5.6ES3B
D090 RD6.2ES3B
D091 RD5.1ES3B

3-5. PRINTED WIRING BOARDS • See page 32 for Semiconductor Lead Layouts.



• IC Block Diagrams

IC002 μPD4066BG



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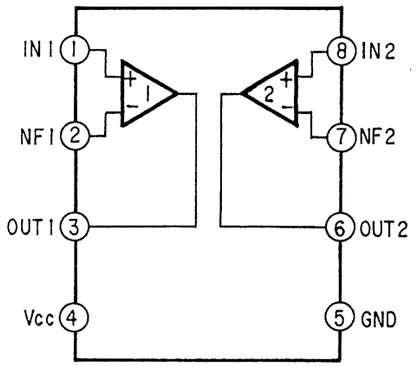
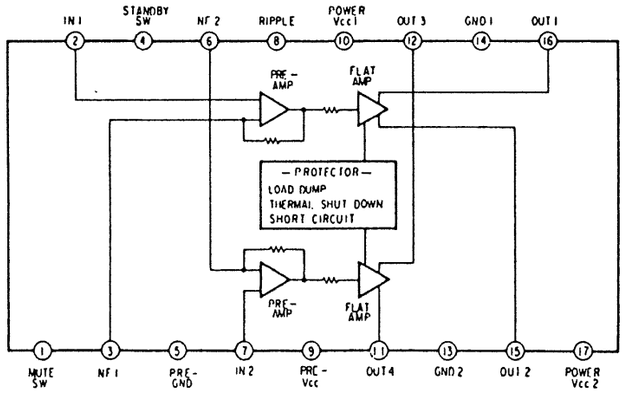
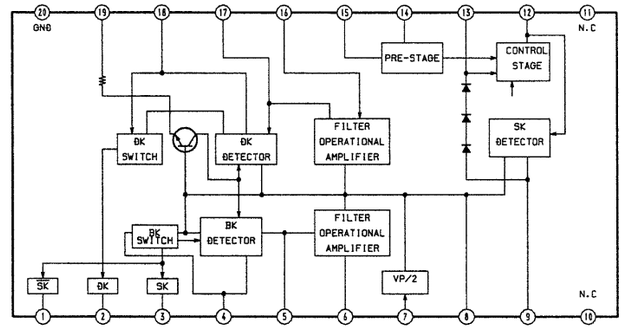


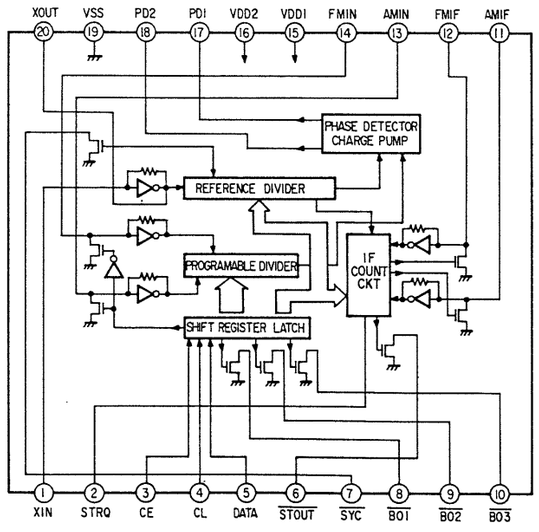
IC501 TA8215H



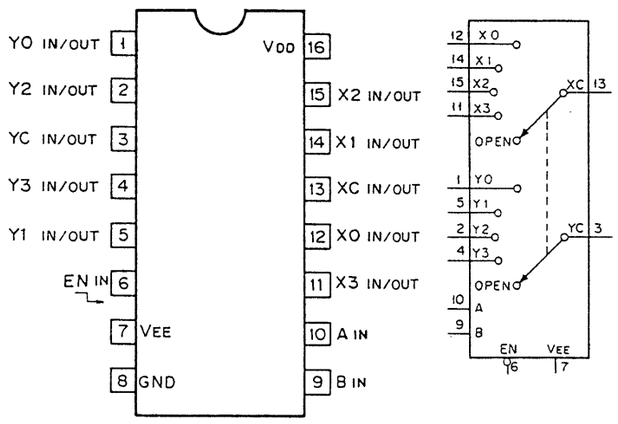
IC721 TDA1579 (XR-502)



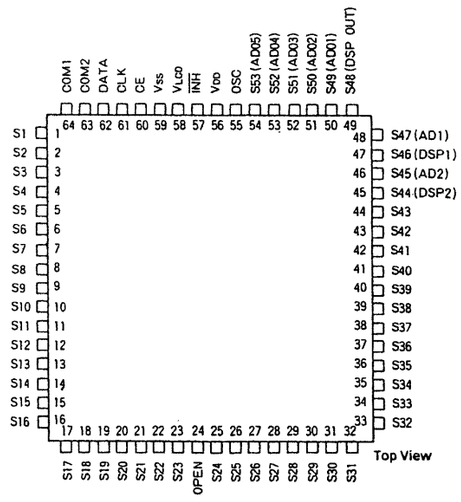
IC003 LA7000N



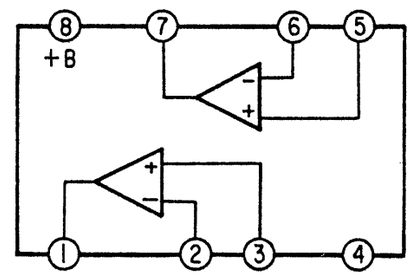
IC401 μPD4052BG



IC911 LC7582E

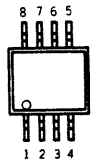


IC722 μPC4558C (XR-502)



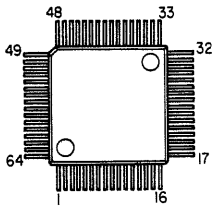
• Semiconductor Lead Layouts

BA3131F

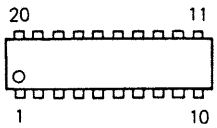


(TOP VIEW)

LC7582

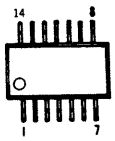


LM7000N
TDA1579



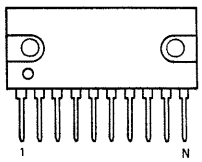
(Top view)

MC14066BF



(TOP VIEW)

TA8215H



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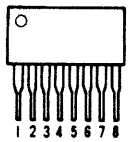

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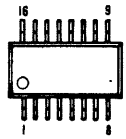
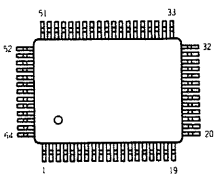


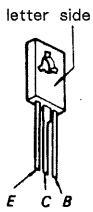
(TOP VIEW)

μPD75116GF-F01-3BE



TOP VIEW

2SD882-P



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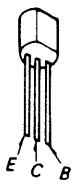

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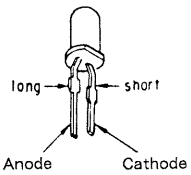

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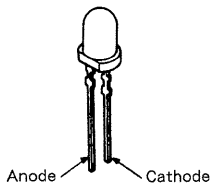

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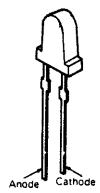


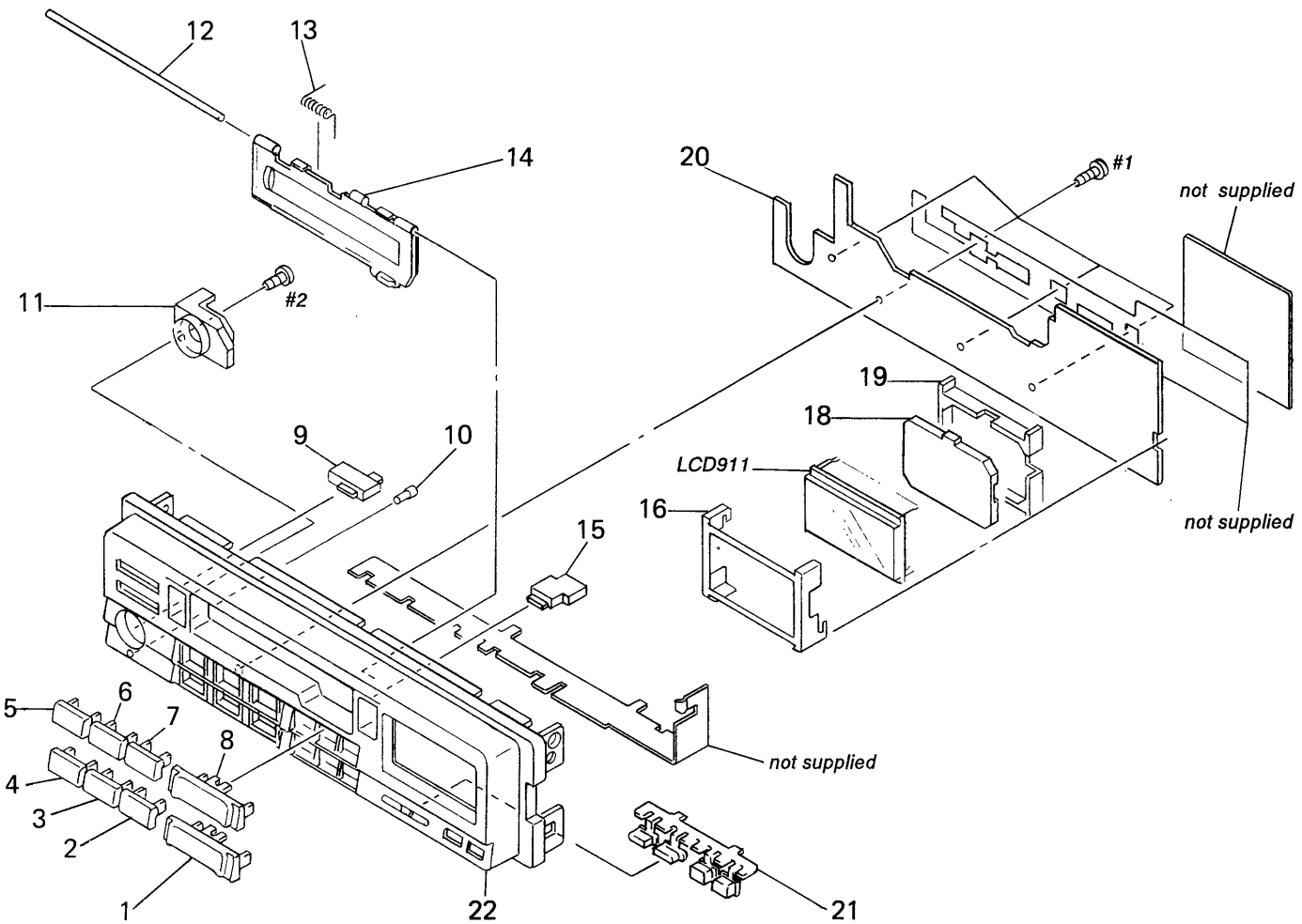
SECTION 4
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

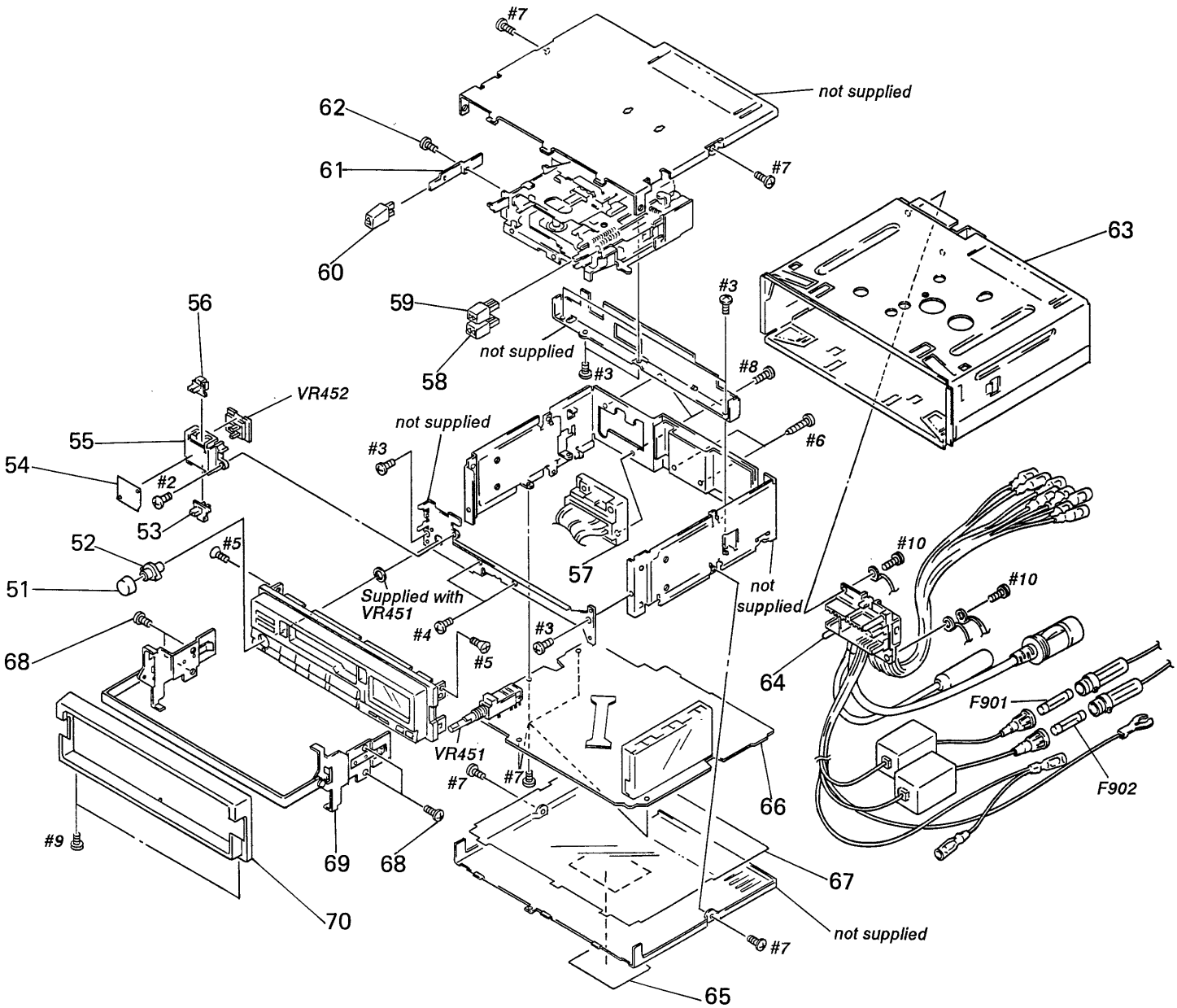
(XR-500):AEP, E, PANAMA Model
(XR-502):Germany Model
(XR-500:PA):PANAMA Model

(1) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	3-381-237-01	BUTTON (MANU)	
2	3-381-244-01	BUTTON (M6)	
3	3-381-243-01	BUTTON (M5)	
4	3-381-242-01	BUTTON (M4)	
5	3-381-239-01	BUTTON (M1)	
6	3-381-240-01	BUTTON (M2)	
7	3-381-241-01	BUTTON (M3)	
8	3-381-238-01	BUTTON (SEEK)	
* 9	3-381-230-01	PLATE (EJ), LIGHT GUIDE	
10	3-381-246-01	BUTTON (RESET)	
* 11	3-381-229-01	PLATE (VOL), LIGHT GUIDE	
12	3-350-709-01	SHAFT (CASSETTE)	
13	3-368-754-01	SPRING, TORSION	
14	X-3365-383-1	DOOR ASSY (XR-500)	
14	X-3365-384-1	DOOR ASSY (XR-502)	
* 15	3-381-231-01	PLATE (FF/REW), LIGHT GUIDE	
* 16	3-381-224-01	COVER (LCD)	
* 18	3-381-222-01	PLATE (LCD), LIGHT GUIDE	
* 19	3-381-221-01	HOLDER (LCD)	
* 20	A-3295-099-A	KEY BOARD, COMPLETE (XR-500:PA)	
* 20	A-3295-150-A	KEY BOARD, COMPLETE (XR-500)	
* 20	A-3295-168-A	KEY BOARD, COMPLETE (XR-502)	
21	3-381-236-01	BUTTON (FUNC)	
22	3-382-564-01	PANEL, FRONT (XR-500:AEP, E, PA)	
22	3-382-565-01	PANEL, FRONT (XR-502)	
LCD911	1-809-770-11	DISPLAY PANEL, LIQUID CRYSTAL	

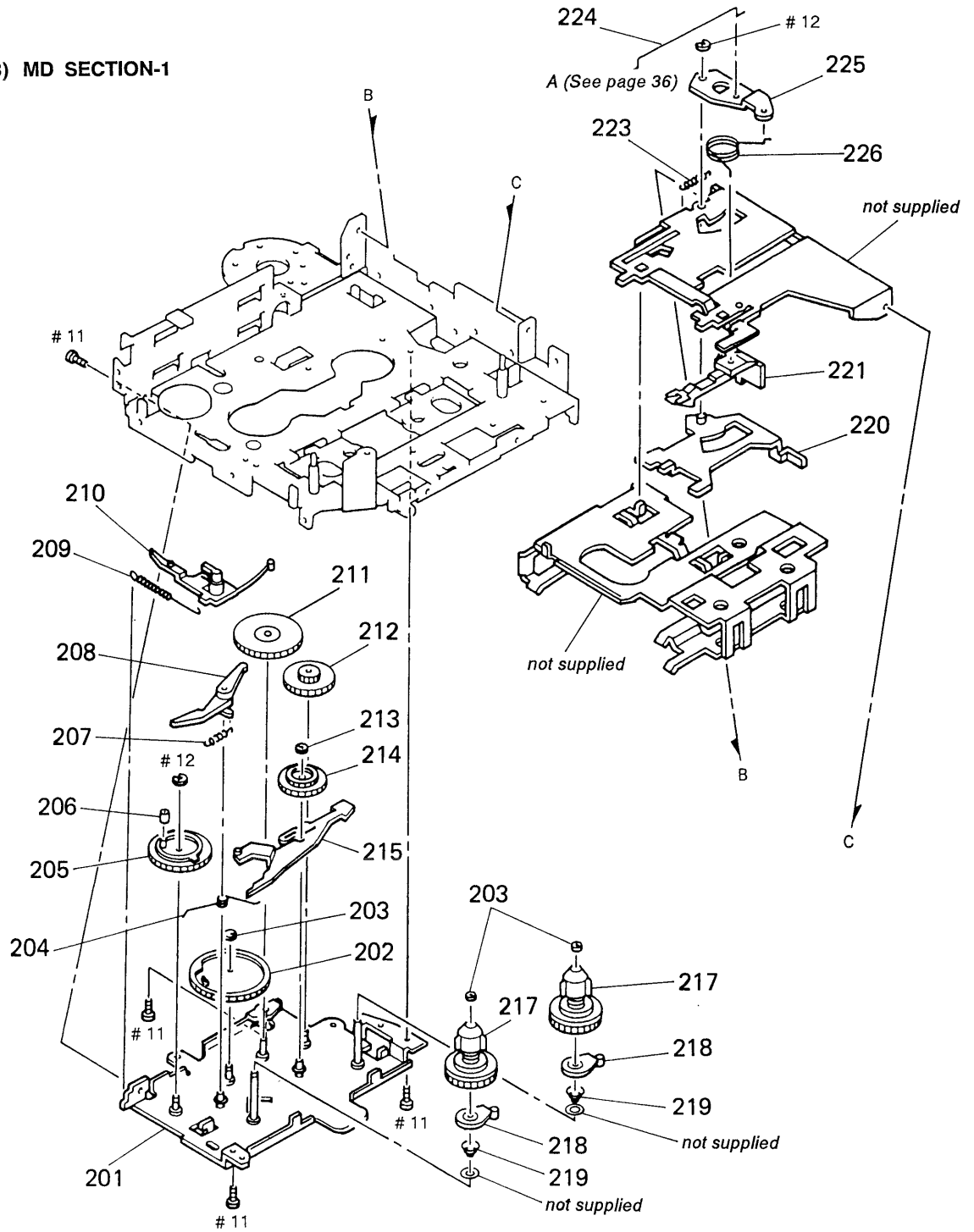
(2) CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
51	3-381-253-01	KNOB (VOL)	
52	3-381-254-01	KNOB (FAD)	
53	3-381-250-01	KNOB (BASS)	
54	3-381-252-01	SHEET (B/T)	
* 55	3-381-233-01	HOLDER (B/T)	
56	3-381-251-01	KNOB (TRE)	
57	1-695-286-11	CORD (WITH CONNECTOR) (SET)	
58	3-381-249-01	BUTTON (REW)	
59	3-381-248-01	BUTTON (FF)	
60	3-381-247-01	BUTTON (EJ)	
* 61	3-396-206-01	LEVER, EJ	
62	3-372-022-11	SCREW +P 2.6X3	
* 63	X-3340-603-1	BRACKET ASSY, SECURITY	
64	1-695-285-11	CORD (WITH CONNECTOR) (BRACKET)	

Ref. No.	Part No.	Description	Remark
* 65	3-382-563-01	LABEL (CONNECTION DIAGRAM)	
* 66	A-3295-149-A	MAIN BOARD, COMPLETE (XR-500:AEP, E)	
* 66	A-3295-166-A	MAIN BOARD, COMPLETE (XR-500:PA)	
* 66	A-3295-167-A	MAIN BOARD, COMPLETE (XR-502)	
* 67	3-396-230-01	ILSULATOR	
68	3-344-561-21	SCREW (M4X4)	
69	3-382-940-01	HANDLE (AS)	
70	3-381-732-01	FRAME, ORNAMENTAL	
VR451	1-241-982-11	RES, VAR, CARBON (WITH SWITCH) (VOL, PULL BAL, FAD, PUSH OFF)	
VR452	1-238-874-11	RES, VAR, SLIDE 50K/50K (BASS, TRE)	
F901	1-532-422-11	FUSE, GLASS TUBE 6A	
F902	1-532-720-11	FUSE, GLASS TUBE 3A	

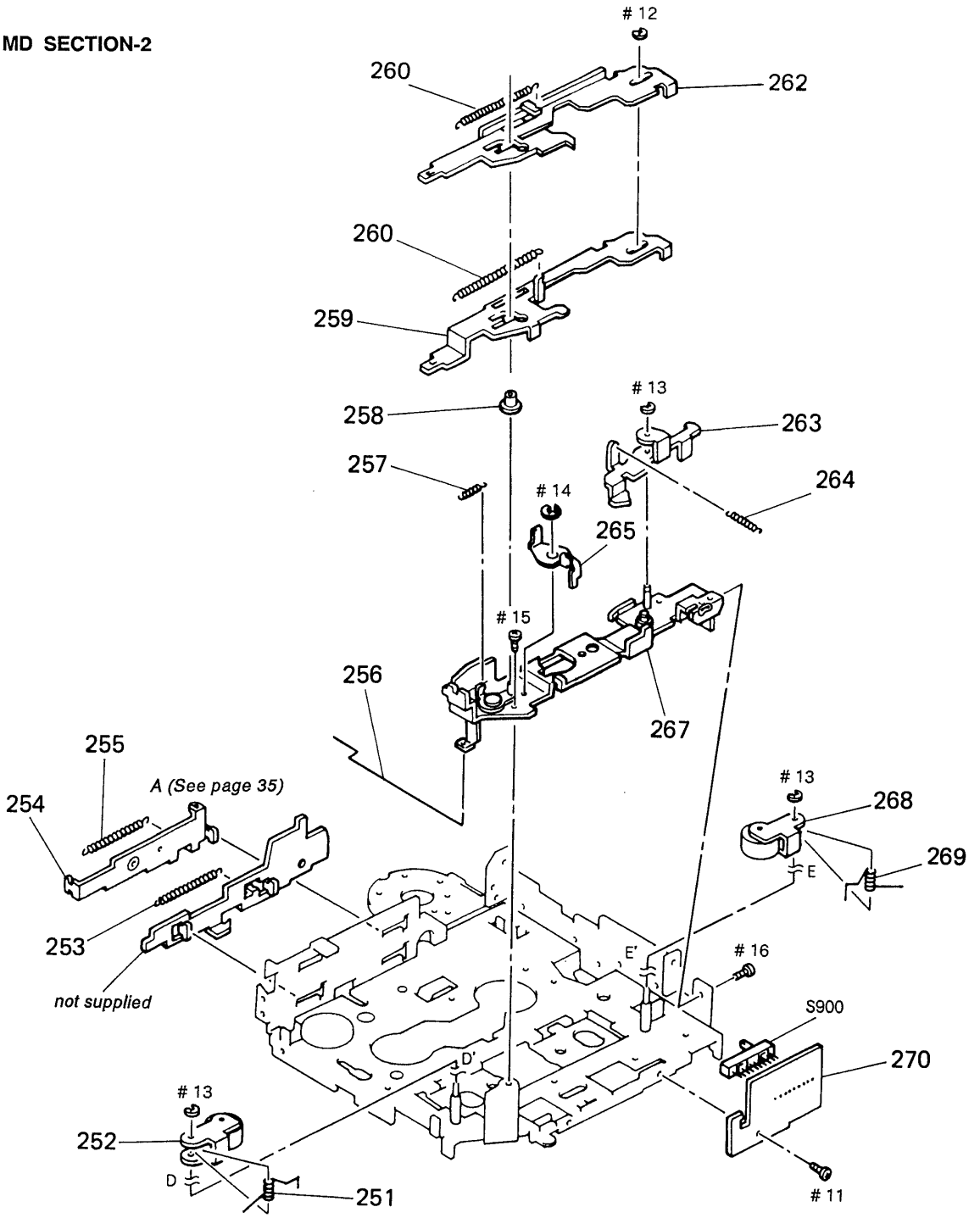
(3) MD SECTION-1



Ref. No.	Part No.	Description	Remark
* 201	3-392-976-01	BASE ASSY, REEL	
202	3-392-990-01	GEAR, DETECTION	
203	3-676-387-00	POLY-SLIDER (DIA. 1.6)	
204	3-392-960-01	SPRING, DASH	
205	3-392-987-01	GEAR, SELECTOR	
206	3-392-944-01	COLLAR (CELECTER GEAR)	
207	3-375-131-01	SPRING, GEAR LOCK ARM	
208	3-392-989-02	ARM, GEAR LOCK	
209	3-392-959-01	SPRING, RATCHET	
210	3-392-985-02	RATCHET	
211	3-392-937-01	GEAR (B) REDUCTION	
212	3-392-936-01	GEAR (A) REDUCTION	

Ref. No.	Part No.	Description	Remark
213	3-570-615-00	POLY-WASHER (DIA. 1.2)	
214	3-392-915-01	GEAR, IDLE	
215	3-392-986-01	ARM, SENSOR	
217	3-376-196-01	SPINDLE ASSY (S), REEL	
218	3-375-380-01	CAM ASSY, DETECTION	
219	3-370-619-01	SPRING, BACK TENSION	
* 220	3-392-921-01	LOCK ASSY, EJECT CAM	
221	3-392-972-01	HOOKER, TAPE	
223	3-392-953-01	SPRING, EJECT CAM LOCK	
224	3-392-969-01	LINK, RETURN	
* 225	3-392-932-01	PLATE, CENTER	
226	3-392-961-01	SPRING (B), CONTER PLATE	

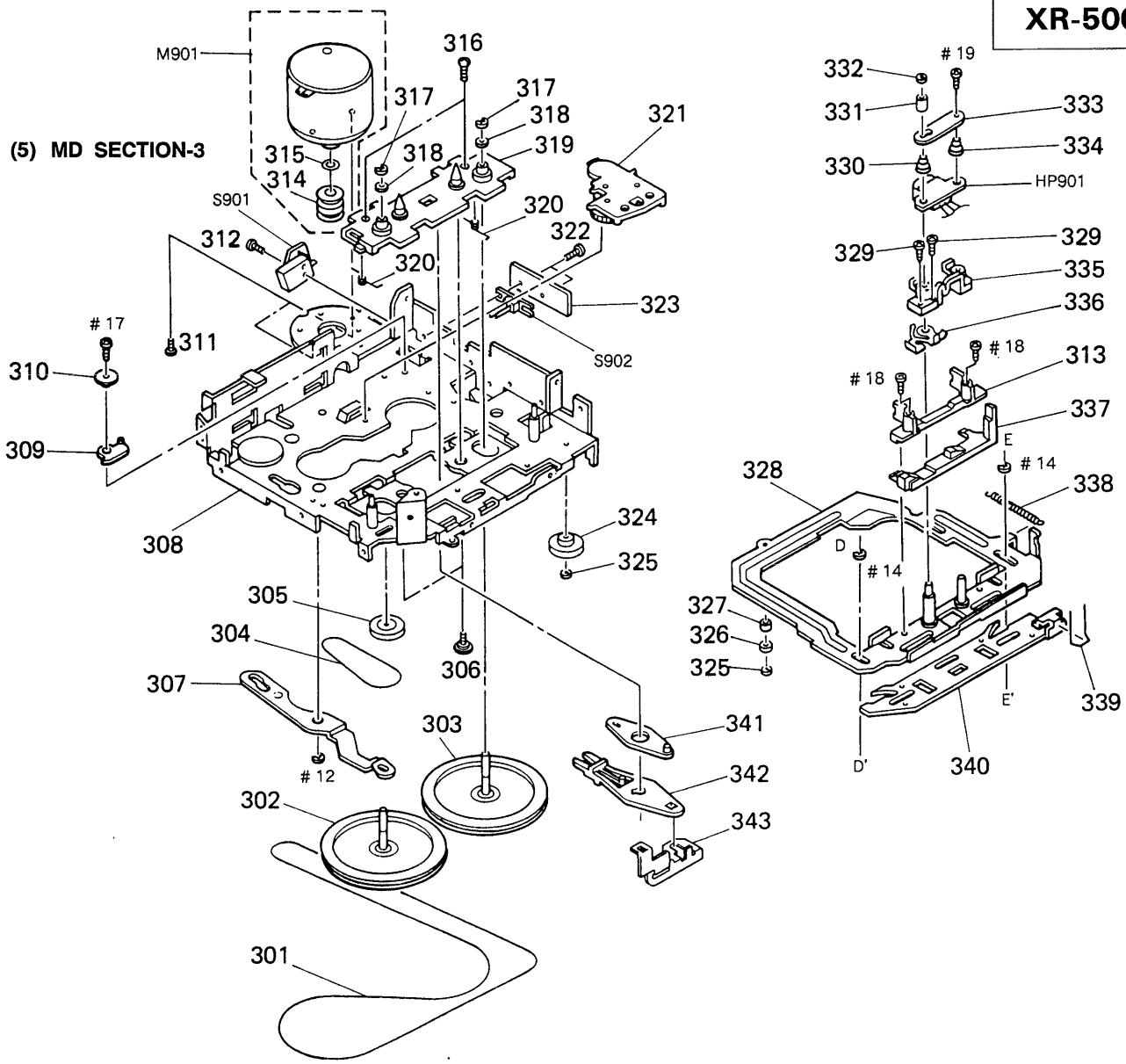
(4) MD SECTION-2



Ref. No.	Part No.	Description	Remark
251	3-392-958-01	SPRING (R), PINCH ARM	
252	3-375-378-01	ARM (R) ASSY, PINCH	
253	3-392-951-01	SPRING, EJECT CAM	
* 254	3-392-978-01	LEVER, EJECT	
255	3-392-950-01	SPRING, EJECT LEVER	
256	3-372-243-01	LINK (B), SELECTOR	
257	3-392-954-01	SPRING, PRIGRAM ARM	
258	3-392-994-01	ROLLER, PROGRAM	
* 259	3-392-992-01	LEVER (Z), REW	
260	3-392-948-01	SPRING, FF/REW LEVER	

Ref. No.	Part No.	Description	Remark
* 262	3-392-991-01	LEVER (Z), FF	
* 263	3-392-935-01	ARM, LOCK	
264	3-392-917-01	SPRING, LOCK LEVER	
* 265	3-392-933-01	LEVER (B), CHANGE	
* 267	3-372-242-01	BRACKET ASSY (D), LEVER	
268	3-375-377-01	ARM (F) ASSY, PINCH	
269	3-392-957-01	SPRING (F), PINCH ARM	
270	3-392-970-01	SWITHC BOARD	
S900	1-692-036-11	SWITCH, SLIDE (FWD POSITION)	

(5) MD SECTION-3



Ref. No.	Part No.	Description	Remark
301	3-392-967-01	BELT, MAIN	
302	3-392-995-02	FLYWHEEL ASSY (BR)	
303	3-392-926-02	FLYWHEEL ASSY (BF)	
304	3-375-375-01	BELT (C), SUB	
305	3-392-938-01	GEAR, PULLY	
306	3-392-918-01	SCREW, EJECT HOOK	
* 307	3-392-979-01	LEVER, REVERSE	
* 308	3-392-974-01	CHASSIS ASSY, MAIN	
309	3-372-244-01	ARM (N), MUTE	
* 310	3-397-427-01	COLLAR, MUTE ARM	
* 311	4-908-792-11	SCREW (B2X3), TAPPING, P1	
312	3-318-203-11	SCREW (B1.7X6), TAPPING	
313	3-392-984-02	GUIDE, TAPE	
* 314	3-392-913-01	PULLEY, MOTOR	
* 315	3-392-912-01	WASHER, MYLAR	
316	3-318-204-81	SCREW (M1.7X3), TAPPING	
317	3-590-768-00	RING (A), E	
318	3-701-437-11	POLY-SLIDER (A)	
* 319	3-375-381-01	BRACKET ASSY (X), CM	
320	3-392-963-01	SPRING (R), EARTH	
321	3-392-916-01	ARM ASSY, TU GEAR	
322	3-318-204-91	SCREW (M1.7X4), TAPPING	
323	3-375-376-01	MUTE BOARD	
324	3-392-941-01	PULLEY (A), IDLE	

Ref. No.	Part No.	Description	Remark
325	3-570-615-00	POLY-WASHER (DIA.1.2)	
326	3-392-945-01	ROLLER (A), H.P	
327	3-392-942-01	ROLLER (B), H.P	
* 328	3-392-975-02	PLATE ASSY, HEAD	
329	3-375-379-01	SCREW, AZIMUTH	
330	3-392-956-01	SPRING (B), ADJUSTOR ARM	
331	3-392-943-01	ROLLER, FF	
332	3-676-387-00	POLY-SLIDER (DIA.1.6)	
* 333	3-392-930-01	RETAINER, SPRING	
334	3-392-955-01	SPRING (A), ADJUSTOR ARM	
* 335	3-379-142-01	ARM (B), ADJUSTOR	
336	3-377-908-01	SHIM (X), ADJUSTOR	
337	3-377-909-01	LINK (X), ADJUSTOR	
338	3-392-952-01	SPRING, HEAD PLATE	
339	3-392-962-01	SPRING, CHANGING ARM	
* 340	3-392-919-01	ARM ASSY, F,R SELECTION	
* 341	3-392-925-01	ARM (A) ASSY, F.R	
* 342	3-392-939-01	ARM, FF	
* 343	3-392-934-01	ARM (B), F.R	
HP900	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3364-496-1	MOTOR ASSY, CPSTAN	
S901	1-554-790-11	SWITCH, POWER (MD POWER)	
S902	1-692-065-11	SWITCH, LEAF (FF/REW MUTE)	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When including parts by reference number, please include the board name.

(XR-500):AEP, E, PANAMA Model
(XR-502):Germany Model
(XR-500:PA):PANAMA Model

Ref. No.	Part No.	Description	Remark
*	A-3295-150-A	KEY BOARD, COMPLETE (XR-500:AEP,E)	
		**********	
*	A-3295-099-A	KEY BOARD, COMPLETE (XR-500:PA)	
		**********	
*	A-3295-168-A	KEY BOARD, COMPLETE (XR-502)	
		**********	
*	3-381-221-01	HOLDER (LCD)	
*	3-381-222-01	PLATE (LCD), LIGHT GUIDE	
*	3-381-224-01	COVER (LCD)	
		< CAPACITOR >	
C911	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C912	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C913	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C914	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
		< DIODE >	
D911	8-719-029-41	DIODE SEL4928A	
D911	8-719-030-56	DIODE SEL4528C (XR-500:PA)	
D912	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D912	8-719-029-40	DIODE LT3H43P	
D913	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D913	8-719-029-40	DIODE LT3H43P	
D914	8-719-029-41	DIODE SEL4928A	
D914	8-719-030-56	DIODE SEL4528C (XR-500:PA)	
D915	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D915	8-719-029-40	DIODE LT3H43P	
D916	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D916	8-719-029-40	DIODE LT3H43P	
D917	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D917	8-719-029-40	DIODE LT3H43P	
D918	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D918	8-719-029-40	DIODE LT3H43P	
D919	8-719-025-98	DIODE SEL6914A	
D919	8-719-029-42	DIODE SLV-31PCA49 (XR-500:PA)	
D920	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D920	8-719-029-40	DIODE LT3H43P	
D921	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D921	8-719-029-40	DIODE LT3H43P	
D922	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D922	8-719-029-40	DIODE LT3H43P	
D923	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D923	8-719-029-40	DIODE LT3H43P	
D924	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D924	8-719-029-40	DIODE LT3H43P	
D925	8-719-025-98	DIODE SEL6914A	
D925	8-719-029-42	DIODE SLV-31PCA49 (XR-500:PA)	
D926	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D926	8-719-029-40	DIODE LT3H43P	
D927	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D927	8-719-029-40	DIODE LT3H43P	
D928	8-719-025-98	DIODE SEL6941A	
D928	8-719-029-42	DIODE SLV-31PCA49 (XR-500:PA)	
D929	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D929	8-719-029-40	DIODE LT3H43P	
D930	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D930	8-719-029-40	DIODE LT3H43P	
D931	8-719-029-39	DIODE LT3K43P (XR-500:PA)	
D931	8-719-029-40	DIODE LT3H43P	
		< IC >	
IC911	8-759-821-44	IC LC7582	
		< JUMPER RESISTOR >	
JR901	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR902	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< LIQUID CRYSTAL DISPLAY >	
LCD911	1-809-770-11	DISPLAY PANEL, LIQUID CRYSTAL	

Ref. No.	Part No.	Description			Remark
		< PILOT LAMP >			
PL911	1-518-646-11	LAMP, PILOT			
PL912	1-518-646-11	LAMP, PILOT			
		< RESISTOR >			
R911	1-216-113-00	METAL CHIP	470K	5% 1/10W	
R912	1-216-091-00	METAL CHIP	56K	5% 1/10W	
R913	1-249-411-11	CARBON	330	5% 1/4W	
R914	1-249-411-11	CARBON	330	5% 1/4W	
R915	1-249-411-11	CARBON	330	5% 1/4W	
R916	1-249-411-11	CARBON	330	5% 1/4W	
R917	1-249-411-11	CARBON	330	5% 1/4W	
R918	1-249-411-11	CARBON	330	5% 1/4W	
R919	1-249-411-11	CARBON	330	5% 1/4W	
		< SWITCH >			
S911	1-692-118-21	SWITCH, KEY BOARD (RESET)			
S912	1-692-118-21	SWITCH, KEY BOARD (M. SCAN/A. MEM)			
S913	1-692-118-21	SWITCH, KEY BOARD (SENS)			
S914	1-692-118-21	SWITCH, KEY BOARD (SHUF1/1)			
S915	1-692-118-21	SWITCH, KEY BOARD (SHUF2/2)			
S916	1-692-118-21	SWITCH, KEY BOARD (3)			
S917	1-692-118-21	SWITCH, KEY BOARD (4)			
S918	1-692-118-21	SWITCH, KEY BOARD (5)			
S919	1-692-118-21	SWITCH, KEY BOARD (6)			
S920	1-692-118-21	SWITCH, KEY BOARD (DISC+/MANUAL+)			
S921	1-692-118-21	SWITCH, KEY BOARD (DISC-/MANUAL-)			
S922	1-692-118-21	SWITCH, KEY BOARD (SEEK+/TRACK+)			
S923	1-692-118-21	SWITCH, KEY BOARD (SEEK-/TRACK-)			
S924	1-692-118-21	SWITCH, KEY BOARD (FM/AM)			
S925	1-692-118-21	SWITCH, KEY BOARD (CD)			
**********					
*	A-3295-149-A	MAIN BOARD, COMPLETE (XR-500:AEP, E)			
		**********			
*	A-3295-166-A	MAIN BOARD, COMPLETE (XR-500:PA)			
		**********			
*	A-3295-167-A	MAIN BOARD, COMPLETE (XR-502)			
		**********			
*	3-363-131-01	FIXER, IC			
		< BATTERY >			
BT001	1-528-225-31	BATTERY, LITHIUM			
		< CAPACITOR >			
C001	1-163-033-00	CERAMIC CHIP	0.022uF	50V	
C002	1-163-033-00	CERAMIC CHIP	0.022uF	50V	
C003	1-126-570-11	ELECT	2.2uF	20% 35V	
C004	1-163-033-00	CERAMIC CHIP	0.022uF	50V	
C005	1-163-097-00	CERAMIC CHIP	15PF	5% 50V	
C006	1-163-097-00	CERAMIC CHIP	15PF	5% 50V	
C007	1-163-033-00	CERAMIC CHIP	0.022uF	50V	
C008	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C012	1-126-301-11	ELECT	1uF	20% 50V	
C013	1-124-584-11	ELECT	100uF	20% 6.3V	
C015	1-163-033-00	CERAMIC CHIP	0.022uF	50V	
C016	1-163-097-00	CERAMIC CHIP	15PF	5% 50V	
C017	1-163-097-00	CERAMIC CHIP	15PF	5% 50V	
C023	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C031	1-163-009-00	CERAMIC CHIP	0.001	10% 50V	
C032	1-163-009-00	CERAMIC CHIP	0.001	10% 50V	
C033	1-163-009-00	CERAMIC CHIP	0.001	10% 50V (XR-500:PA)	
C034	1-163-009-00	CERAMIC CHIP	0.001	10% 50V (XR-500:PA)	
C101	1-163-038-00	CERAMIC CHIP	0.1uF	25V	
C102	1-126-157-11	ELECT	10uF	20% 16V	
C103	1-163-033-00	CERAMIC CHIP	0.022uF	50V	
C104	1-126-562-11	ELECT	4.7	20% 16V (XR-500)	
C105	1-126-562-11	ELECT	4.7	20% 16V (XR-500)	
C106	1-124-464-11	ELECT	0.22uF	20% 50V	
C107	1-126-301-11	ELECT	1	20% 50V (XR-500)	
C121	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C122	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C123	1-163-031-11	CERAMIC CHIP	0.01uF	50V	
C151	1-163-028-11	CERAMIC CHIP	0.0033	50V	
C161	1-163-028-11	CERAMIC CHIP	0.0033	50V	
C301	1-124-584-00	ELECT	100uF	20% 10V	
C302	1-124-589-11	ELECT	47uF	20% 16V	
C311	1-163-006-11	CERAMIC CHIP	560PF	10% 50V	
C312	1-128-112-11	ELECT	33uF	20% 6.3V	
C313	1-126-301-11	ELECT	1uF	20% 50V	
C314	1-163-006-11	CERAMIC CHIP	560PF	10% 50V	
C315	1-163-033-00	CERAMIC CHIP	0.022uF	50V	
C316	1-126-562-11	ELECT	4.7uF	20% 16V	
C321	1-163-006-11	CERAMIC CHIP	560PF	10% 50V	
C322	1-128-112-11	ELECT	33uF	20% 6.3V	
C323	1-126-301-11	ELECT	1uF	20% 50V	
C324	1-163-006-11	CERAMIC CHIP	560PF	10% 50V	
C325	1-163-033-00	CERAMIC CHIP	0.022uF	50V	
C326	1-126-562-11	ELECT	4.7uF	20% 16V	
C401	1-124-589-11	ELECT	47uF	20% 16V	
C411	1-126-570-11	ELECT	2.2uF	20% 35V	
C412	1-126-570-11	ELECT	2.2uF	20% 35V	
C421	1-126-570-11	ELECT	2.2uF	20% 35V	
C422	1-126-570-11	ELECT	2.2uF	20% 35V	
C451	1-163-017-00	CERAMIC CHIP	0.0047uF	5% 50V	

Ref. No.	Part No.	Description				Remark
C452	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V	
C453	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C454	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C455	1-126-570-11	ELECT	2.2uF	20%	35V	
C456	1-126-570-11	ELECT	2.2uF	20%	35V	
C461	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C462	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V	
C463	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C464	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C465	1-126-570-11	ELECT	2.2uF	20%	35V	
C466	1-126-570-11	ELECT	2.2uF	20%	35V	
C471	1-124-589-11	ELECT	47uF	20%	16V	
C501	1-124-584-00	ELECT	100uF	20%	10V	
C502	1-164-222-11	CERAMIC CHIP	0.22		25V	
C511	1-124-257-00	ELECT	2.2uF	20%	50V	
C512	1-163-009-00	CERAMIC CHIP	0.001uF	10%	50V	
C513	1-124-234-00	ELECT	22uF	20%	16V	
C514	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C515	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C521	1-124-257-00	ELECT	2.2uF	20%	50V	
C522	1-163-009-00	CERAMIC CHIP	0.001uF	10%	50V	
C523	1-124-234-00	ELECT	22uF	20%	16V	
C524	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C525	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C602	1-124-584-00	ELECT	100uF	20%	10V	
C603	1-124-241-11	ELECT	22uF	20%	25V	
C604	1-126-301-11	ELECT	1uF	20%	50V	
C605	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C606	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C607	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C608	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C609	1-128-355-11	ELECT	2200uF	20%	16V	
C610	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C611	1-126-335-11	ELECT	220uF	20%	10V	
C612	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C626	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C627	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C630	1-124-589-11	ELECT	47uF	20%	16V	
C631	1-124-234-00	ELECT	22uF	20%	16V	
C701	1-126-157-11	ELECT	10uF	20%	16V	
C702	1-126-176-11	ELECT	220uF	20%	10V	
C703	1-163-033-00	CERAMIC CHIP	0.002uF		50V	
C721	1-126-562-11	ELECT	4.7uF	20%	16V	(XR-502)
C722	1-136-175-00	FILM	0.068uF	5%	50V	(XR-502)
C723	1-136-175-00	FILM	0.068uF	5%	50V	(XR-502)
C724	1-124-463-00	ELECT	0.1uF	20%	50V	(XR-502)
C725	1-130-477-00	MYLAR	0.0033uF	5%	50V	(XR-502)
C726	1-124-463-00	ELECT	0.1uF	20%	50V	(XR-502)
C727	1-136-161-00	FILM	0.047uF	5%	50V	(XR-502)
C728	1-136-161-00	FILM	0.047uF	5%	50V	(XR-502)
C729	1-124-463-00	ELECT	0.1uF	20%	50V	(XR-502)
C730	1-126-176-11	ELECT	220uF	20%	10V	(XR-502)
C732	1-163-245-11	CERAMIC CHIP	56PF	5%	50V	(XR-502)
C733	1-136-175-00	FILM	0.068uF	5%	50V	(XR-502)
C734	1-136-175-00	FILM	0.068uF	5%	50V	(XR-502)
C751	1-124-589-11	ELECT	47uF	20%	16V	
C752	1-126-157-11	ELECT	10uF	20%	16V	
C753	1-126-153-11	ELECT	22uF	20%	6.3V	
C761	1-126-562-11	ELECT	4.7uF	20%	16V	
C771	1-126-562-11	ELECT	4.7uF	20%	16V	

< DIODE >

D001	8-719-911-19	DIODE	1SS119
D002	8-719-911-19	DIODE	1SS119
D003	8-719-911-19	DIODE	1SS119
D004	8-719-109-94	DIODE	RD6.2ES-B3
D005	8-719-911-19	DIODE	1SS119
D007	8-719-911-19	DIODE	1SS119
D008	8-719-911-19	DIODE	1SS119
D009	8-719-911-19	DIODE	1SS119
D010	8-719-911-19	DIODE	1SS119
D011	8-719-911-19	DIODE	1SS119
D012	8-719-911-19	DIODE	1SS119 (EXCEPT XR-500:PA)
D014	8-719-109-98	DIODE	RD6.8ES-B3
D015	8-719-109-98	DIODE	RD6.8ES-B3
D016	8-719-109-98	DIODE	RD6.8ES-B3
D017	8-719-109-98	DIODE	RD6.8ES-B3
D018	8-719-109-98	DIODE	RD6.8ES-B3
D019	8-719-109-84	DIODE	RD5.1ES-B1
D020	8-719-109-98	DIODE	RD6.8ES-B3
D021	8-719-951-22	DIODE	IMN10
D022	8-719-951-22	DIODE	IMN10
D023	8-719-951-22	DIODE	IMN10
D027	8-719-911-19	1SS119	(XR-502)
D102	8-719-951-22	DIODE	IMN10
D104	8-719-109-84	DIODE	RD5.1ES-B1
D105	8-719-914-44	DIODE	DAP202K
D301	8-719-110-14	DIODE	RD9.1ES-B3
D401	8-719-911-19	DIODE	1SS119
D601	8-719-110-18	DIODE	RD10ES-B3
D602	8-719-109-90	DIODE	RD5.6ES-B3
D603	8-719-914-44	DIODE	DAP202K
D605	8-719-109-94	DIODE	RD6.2ES-B3
D606	8-719-109-90	DIODE	RD5.6ES-B3
D607	8-719-984-80	DIODE	1SR139-200
D608	8-719-110-14	DIODE	RD9.1ES-B3
D610	8-719-984-80	DIODE	1SR139-200

Ref. No.	Part No.	Description	Remark
D701	8-719-109-63	DIODE RD3.0E-B2	
D702	8-719-911-19	DIODE 1SS119	
D703	8-719-914-44	DIODE DAP202K	
D704	8-719-110-18	DIODE RD10ES-B3	
D721	8-719-914-44	DIODE DAP202K (XR-502)	
		< IC >	
IC001	8-759-051-57	IC uPD75116GF-F01-3BE	
IC002	8-759-008-67	IC MC14066BF	
IC003	8-759-821-41	IC LM7000N	
IC301	8-759-105-60	IC uPC1228HA	
IC401	8-759-106-22	IC uPD4052BG	
IC501	8-759-243-27	IC TA8215H	
IC721	8-759-971-69	IC TDA1579 (XR-502)	
IC722	8-759-145-58	IC uPC4558C (XR-502)	
IC751	8-759-048-67	IC BA3121F	
		< JUMPER RESISTOR >	
JR1	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR2	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR3	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR4	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR5	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR6	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR7	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR8	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR9	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR10	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR11	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR12	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR13	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR14	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR15	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR16	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR17	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR18	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR19	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR20	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR21	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR22	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR23	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR24	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR25	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR26	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR27	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR28	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR29	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR30	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR31	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR32	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR33	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR34	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR35	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR36	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR37	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR38	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR39	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR40	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR41	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR42	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR43	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L001	1-410-324-11	INDUCTOR 4.7uH	
L002	1-410-324-11	INDUCTOR 4.7uH	
L101	1-410-324-11	INDUCTOR 4.7uH	
L102	1-410-521-11	INDUCTOR 100uH (XR-500)	
L601	1-410-324-11	INDUCTOR 4.7uH	
		< TRANSISTOR >	
Q001	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q002	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q003	8-729-901-01	TRANSISTOR DTC144EK	
Q004	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q005	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q009	8-729-923-57	TRANSISTOR DTA124TE	
Q010	8-729-901-00	TRANSISTOR DTC124EK	
Q012	8-729-901-00	TRANSISTOR DTC124EK	
Q013	8-729-903-46	TRANSISTOR 2SB1132-P	
Q015	8-729-901-00	TRANSISTOR DTC124EK	
Q016	8-729-903-46	TRANSISTOR 2SB1132-P	
Q021	8-729-901-00	TRANSISTOR DTC124EK	
Q022	8-729-901-06	TRANSISTOR DTA144EK	
Q043	8-729-901-01	TRANSISTOR DTC144EK (XR-502)	
Q044	8-729-920-31	TRANSISTOR DTC343TK (XR-502)	
Q045	8-729-920-31	TRANSISTOR DTC343TK (XR-502)	
Q101	8-729-120-28	TRANSISTOR 2SC1623-L5L6 (XR-500)	
Q102	8-729-216-22	TRANSISTOR 2SA1162 (XR-500)	
Q121	8-729-102-06	TRANSISTOR 2SC2223	
Q122	8-729-102-06	TRANSISTOR 2SC2223	
Q411	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q421	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q451	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q461	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q601	8-729-903-46	TRANSISTOR 2SB1132-P	
Q602	8-729-188-23	TRANSISTOR 2SD882-P	
Q603	8-729-142-46	TRANSISTOR 2SC2001-LK	
Q604	8-729-901-01	TRANSISTOR DTC144EK	

Ref. No.	Part No.	Description				Remark
Q605	8-729-188-23	TRANSISTOR 2SD882-P				
Q606	8-729-120-28	TRANSISTOR 2SC1623-L5L6				
Q607	8-729-903-46	TRANSISTOR 2SB1132-P				
Q608	8-729-903-46	TRANSISTOR 2SB1132-P				
Q631	8-729-120-27	TRANSISTOR 2SA812				
Q632	8-729-920-78	TRANSISTOR 2SB1132				
Q633	8-729-901-00	TRANSISTOR DTC124EK				
Q701	8-729-120-28	TRANSISTOR 2SC1623-L5L6				
Q702	8-729-901-06	TRANSISTOR DTA144EK				
Q703	8-729-216-22	TRANSISTOR 2SA1162				
Q711	8-729-920-31	TRANSISTOR DTC343TK				
Q712	8-729-920-31	TRANSISTOR DTC343TK				
Q721	8-729-920-31	TRANSISTOR DTC343TK				
Q722	8-729-920-31	TRANSISTOR DTC343TK				
		< RESISTOR >				
R001	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R002	1-249-417-11	CARBON	1K	5%	1/4W	
R003	1-216-073-00	METAL CHIP	10K	5%	1/10W	(XR-502)
R004	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R005	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R006	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R007	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R008	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R011	1-216-081-00	CARBON	22K	5%	1/8W	
R015	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R017	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R018	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R019	1-216-045-00	METAL CHIP	680	5%	1/10W	
R020	1-249-417-11	CARBON	1K	5%	1/4W	
R021	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R022	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R023	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R024	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R025	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R026	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R027	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R028	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R029	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R030	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R031	1-216-246-00	METAL GLAZE	100K	5%	1/8W	
R032	1-249-421-11	CARBON	2.2K	5%	1/4W	
R033	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R036	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R037	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R038	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R039	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R042	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R048	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R050	1-216-246-00	CARBON	100K	5%	1/8W	
R101	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R102	1-216-081-00	CARBON	22K	5%	1/8W	
R105	1-216-262-00	METAL GLAZE	470K	5%	1/8W	
R106	1-249-421-11	CARBON	2.2K	5%	1/4W	
R107	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R107	1-216-075-00	METAL CHIP	12K	5%	1/10W	(XR-500:PA)
R108	1-216-089-00	METAL CHIP	47K	5%	1/10W	(XR-500)
R109	1-216-238-00	METAL CHIP	47K	5%	1/8W	(XR-500)
R110	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R111	1-216-091-00	METAL CHIP	56K	5%	1/10W	(XR-500)
R112	1-216-105-00	METAL CHIP	220K	5%	1/10W	
R113	1-216-105-00	METAL CHIP	220K	5%	1/10W	(XR-500)
R114	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R115	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R121	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R122	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R123	1-216-043-00	METAL CHIP	560	5%	1/10W	
R124	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R125	1-216-089-00	METAL CHIP	47K	5%	1/10W	(XR-500)
R151	1-216-073-00	METAL CHIP	10K	5%	1/10W	(XR-502)
R151	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R151	1-216-085-00	METAL CHIP	33K	5%	1/10W	(XR-500:PA)
R161	1-216-073-00	METAL CHIP	47K	5%	1/10W	(XR-502)
R161	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R161	1-216-085-00	METAL CHIP	33K	5%	1/10W	(XR-500:PA)
R301	1-249-417-11	CARBON	1K	5%	1/4W	
R302	1-249-415-11	CARBON	680	5%	1/4W	
R303	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R304	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R306	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R311	1-216-025-00	METAL CHIP	100	5%	1/10W	
R312	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R313	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R321	1-216-025-00	METAL CHIP	100	5%	1/10W	
R322	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R323	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R401	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R402	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R403	1-249-417-11	CARBON	1K	5%	1/4W	
R411	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R412	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R413	1-216-041-00	METAL CHIP	470	5%	1/10W	
R414	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R421	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R422	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R423	1-216-041-00	METAL CHIP	470	5%	1/10W	

Ref. No.	Part No.	Description				Remark
R424	1-249-423-11	CARBON	3.3K	5%	1/4W	
R451	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R452	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R453	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R454	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R455	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R456	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R457	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R458	1-216-037-00	METAL CHIP	330	5%	1/10W	
R459	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R461	1-216-071-00	METAL CHIP	8.2K	5%	1/10W	
R462	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R463	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R464	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
R465	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R466	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R467	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R468	1-216-037-00	METAL CHIP	330	5%	1/10W	
R469	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	
R501	1-249-429-11	CARBON	10K	5%	1/4W	
R502	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R511	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R512	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R513	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R514	1-216-009-00	METAL CHIP	22	5%	1/10W	
R515	1-249-451-11	CARBON	2.2	5%	1/4W	
R516	1-249-451-11	CARBON	2.2	5%	1/4W	
R521	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R522	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R523	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R524	1-216-009-00	METAL CHIP	22	5%	1/10W	
R525	1-249-451-11	CARBON	2.2	5%	1/4W	
R526	1-249-451-11	CARBON	2.2	5%	1/4W	
R601	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R602	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R603	1-216-059-00	METAL CHIP	2.7K	5%	1/10W	
R604	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R605	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R606	1-249-478-11	CARBON	2.2	5%	1/2W	
R607	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R608	1-249-423-11	CARBON	3.3K	5%	1/4W	
R609	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R610	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R611	1-249-425-11	CARBON	4.7K	5%	1/4W	
R612	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R613	1-247-732-11	CARBON	27	5%	1/2W	
R614	1-249-478-11	CARBON	2.2	5%	1/2W	
R618	1-216-198-00	METAL CHIP	1K	5%	1/8W	
R619	1-216-216-00	METAL CHIP	5.6K	5%	1/8W	

Ref. No.	Part No.	Description				Remark
R620	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R621	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R631	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R632	1-216-091-00	METAL CHIP	56K	5%	1/10W	
R633	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R634	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R635	1-216-206-00	METAL CHIP	2.2K	5%	1/8W	
R636	1-216-206-00	METAL CHIP	2.2K	5%	1/8W	
R637	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R638	1-216-065-00	METAL CHIP	4.7K	5%	1/8W	
R701	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R702	1-249-425-11	CARBON	4.7K	5%	1/4W	
R703	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R704	1-249-421-11	CARBON	2.2K	5%	1/4W	
R705	1-216-089-00	METAL CHIP	47K	5%	1/10W	(XR-502)
R721	1-216-089-00	METAL CHIP	47K	5%	1/10W	(XR-502)
R722	1-216-093-00	METAL CHIP	68K	5%	1/10W	(XR-502)
R723	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	(XR-502)
R724	1-216-097-00	METAL CHIP	100K	5%	1/10W	(XR-502)
R725	1-216-041-00	METAL CHIP	470	5%	1/10W	(XR-502)
R726	1-216-117-00	METAL CHIP	680K	5%	1/10W	(XR-502)
R727	1-216-105-00	METAL CHIP	220K	5%	1/10W	(XR-502)
R728	1-216-117-00	METAL CHIP	680K	5%	1/10W	(XR-502)
R729	1-216-089-00	METAL CHIP	47K	5%	1/10W	(XR-502)
R730	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	(XR-502)
R731	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	(XR-502)
R732	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	(XR-502)
R733	1-216-061-00	METAL CHIP	3.3K	5%	1/10W	(XR-502)
R734	1-216-041-00	METAL CHIP	470	5%	1/10W	(XR-502)
R735	1-216-089-00	METAL CHIP	47K	5%	1/10W	(XR-502)
R737	1-216-073-00	METAL CHIP	10K	5%	1/10W	(XR-502)
R738	1-216-075-00	METAL CHIP	12K	5%	1/10W	(XR-502)
R739	1-216-085-00	METAL CHIP	33K	5%	1/10W	(XR-502)
R740	1-216-105-00	METAL CHIP	220K	5%	1/10W	(XR-502)
R741	1-216-095-00	METAL CHIP	82K	5%	1/10W	(XR-502)
R742	1-216-089-00	METAL CHIP	47K	5%	1/10W	(XR-502)
R752	1-216-025-00	METAL CHIP	100	5%	1/10W	
R753	1-216-041-00	METAL CHIP	470	5%	1/10W	
R761	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R762	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R763	1-247-855-00	CARBON	10K	5%	1/4W	
R771	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R772	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R773	1-247-855-00	CARBON	10K	5%	1/4W	
		< TUNER >				
TU101	1-693-171-11	TUNER UNIT (FM/AM)				

Ref. No.	Part No.	Description	Remark
		< TRANSFORMER >	
T721	1-424-036-11	COIL (FILTER) (XR-502)	
		< VARIABLE RESISTOR >	
VR101	1-238-020-11	RES, ADJ, CARBON 100K	
VR451	1-241-982-11	RES, VAR, CARBON (WITH SWITCH) (VOL, PUL BAL, FAD, PUSH OFF)	
VR721	1-238-732-21	RES, ADJ, CARBON 100 (XR-502)	
VR722	1-238-019-11	RES, ADJ, CARBON 47K (XR-502)	
		< VIBRATOR >	
XT001	1-567-821-11	VIBRATOR, CRYSTAL 4.19MHz	
XT002	1-567-848-11	VIBRATOR, CRYSTAL 7.2MHz	
		< COMPOSITION CIRCUIT BLOCK >	
Z001	1-233-023-11	COMPOSITION CIRCUIT BLOCK 100KX8	

****

MISCELLANEOUS
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57	1-695-286-11	CORD (WITH CONNECTOR) (SET)	
M901	X-3364-496-1	MOTOR ASSY, CPSTAN	
VR452	1-238-874-11	RES, VAR, SLIDE 50K/50K (BASS, TRE)	
F901	1-532-422-11	FUSE, GLASS TUBE 6A	
F902	1-532-720-11	FUSE, GLASS TUBE 3A	

****

ACCESSORIES & PACKING MATERIALS
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*	3-381-345-01	INDIVIDUAL CARTON (XR-500:AEP, E, PA)	
*	3-381-347-01	CUSHION (UPPER)	
*	3-381-348-01	CUSHION (LOWER)	
*	3-381-349-01	INDIVIDUAL CARTON (XR-502)	
	3-755-377-11	MANUAL, INSTRUCTION, INSTALL (XR-500:AEP) (English, French, Spanish, Dutch)	
	3-755-377-41	MANUAL, INSTRUCTION, INSTALL (XR-500:AEP) (Swedish, Italian, Portuguese)	
	3-755-377-51	MANUAL, INSTRUCTION, INSTALL (XR-500:AEP) (German, Dutch)	
	3-755-377-61	MANUAL, INSTRUCTION, INSTALL (XR-502) (English, French, German, Italian)	
	3-755-377-71	MANUAL, INSTRUCTION, INSTALL (XR-500:E, PA) (English, Spanish)	
	3-755-378-11	MANUAL, INSTRUCTION (XR-500:AEP) (English, French, Spanish, Dutch)	
	3-755-378-41	MANUAL, INSTRUCTION (XR-500:AEP) (Swedish, Italian, Portuguese)	
	3-755-378-51	MANUAL, INSTRUCTION (XR-500:AEP) (German, Dutch)	
	3-755-378-61	MANUAL, INSTRUCTION (XR-502) (English, French, Spanish, Dutch)	
	3-755-378-71	MANUAL, INSTRUCTION (XR-500:E, PA) (English, Spanish)	

****

HARDWARE LIST
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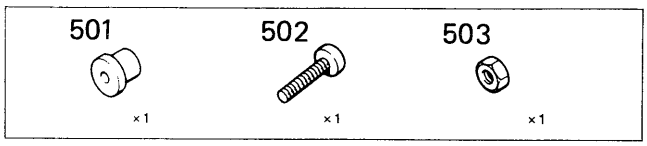
#1	7-621-255-55	SCREW +PTT 2X8 (S)
#2	7-621-255-20	SCREW +PTT 2X4 (S)
#3	7-685-791-01	SCREW +PTT 2.6X5
#4	7-621-773-86	SCREW +P 2.6X4
#5	7-685-133-19	SCREW +K 2.6X6
#6	7-682-550-09	SCREW +P 3X12 TPYE4
#7	7-685-645-79	SCREW +P 3X6 TPYE2 NON-SLIT
#8	7-682-548-04	SCREW +P 3X8
#9	7-627-553-38	SCREW PRECISION +P2x3
#10	7-686-449-01	SCREW +PS 3X10
#11	7-621-255-15	SCREW +P 2X3
#12	7-624-104-04	STOP RING 2.0, TYPE -E
#13	7-624-102-04	STOP RING 1.5, TYPE -E
#14	7-624-118-01	RING, RETAINING E-2.5
#15	7-621-255-25	SCREW +PTT 2X4 (S)
#16	7-621-555-10	SCREW +K 2X3
#17	7-621-591-00	SCREW +K 2X4
#18	7-627-553-88	SCREW, PRECISION +P 2X7
#19	7-627-553-48	SCREW, PRECISION +P 2X4

• MOUNTING HARDWARE



Ref. No.	Part No.	Description	Remark
501	3-349-410-01	BUSHING	
502	7-682-583-04	SCREW +P5X40	
503	7-682-025-04	N5, TYPE2	

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